AUGUST 1982 NUMBER 456 -- Part I

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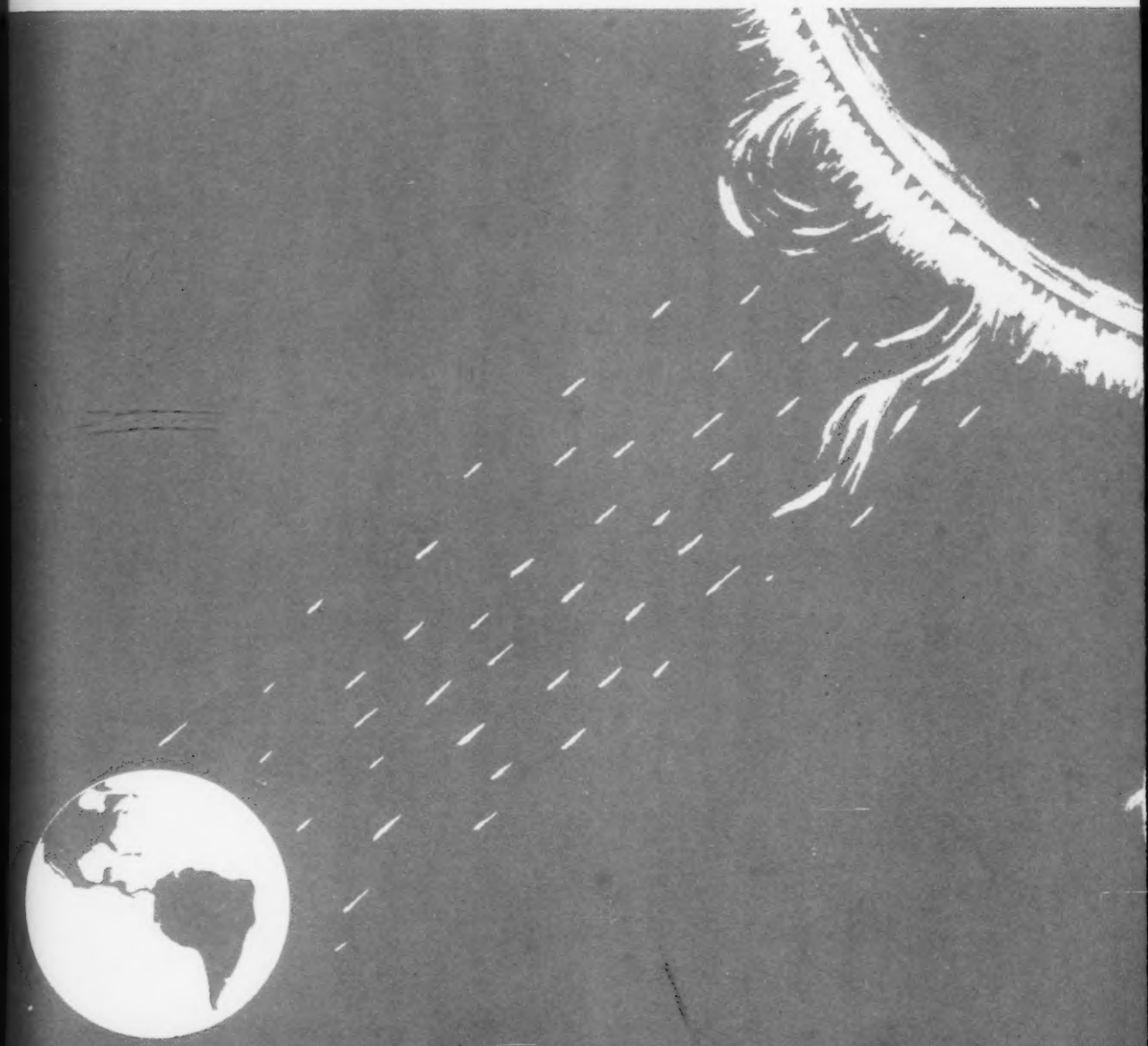
Solar-Geophysical Data prompt reports

Data for July 1982, June 1982 & Late Data
Explanation of Data Reports Issued as Number 450 (Supplement) February 1982



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Solar - Geophysical Data

NO. 456 AUGUST 1982

Part I (Prompt Reports)

DATA FOR
JULY 1982
JUNE 1982

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To standardize referencing these reports in the open literature, the following format is recommended:
Solar-Geophysical Data, 450 Part I (or Part II), pages, February 1982, U.S. Department of Commerce (Boulder, Colorado, U.S.A. 80303).

SOLAR-GEOPHYSICAL DATA

No. 456

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

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Notes:

"445A 54" listed under 1981 Jul means that the sunspot drawings for Jul 1981 were contained in Solar-Geophysical Data Number 444 - Part I, beginning on page 54.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

JULY 1982 DATA

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ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JULY 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	No. of Flares: Total	M	X	Outstanding events	Forecasts: Date	Location Lat-Long	Desc*	Alert Situations
182	01	30	073	105	029	N08W33	2	0	0		01	N08W33	Q	SOLQUIET
						S14W31	0	0	0			S14W31	Q	MAGQUIET
						S13W00	0	0	0			S13W00	Q	
						N07E39	1	0	0			N07E39	Q	
						S08E63	0	0	0			S08E63	Q	
183	02	01	102	103	015	N07W46	0	0	0		02	N07W46	Q	SOLQUIET
						S14W44	0	0	0			S14W44	Q	MAGQUIET
						S10W05	0	0	0			S10W05	Q	
						N12E14	0	0	0			N12E14	Q	
						N07E26	0	0	0			N07E26	Q	
						N07E34	0	0	0			N07E34	Q	
						S08E49	0	0	0			S08E49	Q	
						S12E51	0	0	0			S12E51	Q	
184	03	02	097	103	012	N06W61	2	0	0		03	N06W61	Q	SOLQUIET
						S15W58	0	0	0			S15W58	Q	MAGQUIET
						N13E01	0	0	0			N13E01	Q	
						N07E13	0	0	0			N07E13	Q	
						S10E25	1	0	0			S10E25	Q	
						S08E36	0	0	0			S08E36	Q	
						S11E37	1	0	0			S11E37	Q	
						N16E77	0	0	0			N16E77	Q	
185	04	03	071	106	009	S15W74	0	0	0		04	S15W74	Q	SOLQUIET
						N13W12	0	0	0			N13W12	Q	MAGQUIET
						S07E14	2	0	0			S07E14	Q	
						S12E22	0	0	0			S12E22	Q	
						S08E23	0	0	0			S08E23	Q	
						N17E64	0	0	0			N17E64	Q	
186	05	04	076	108	004	N13W16	0	0	0	Presto Tenflare	05	N13W16	Q	SOLQUIET
						S11E09	1	0	0	250 Flux Units		S11E09	Q	MAGQUIET
						S06E10	1	0	0	04/0640Z Duration		S06E10	Q	
						N18E51	0	0	0	45 Minutes.		N18E51	Q	
						S18E64	2	1	0			S18E64	Q	
						S18E67	1	0	0			S18E67	Q	
187	06	05	054	110	006	S09W05	0	0	0		06	S09W05	Q	SOLQUIET
						S18E49	0	0	0			S18E49	Q	MAGQUIET
						S17E54	1	0	0			S17E54	E	
188	07	06	054	117	014	S10W17	3	0	0		07	S10W17	E	SOLQUIET
						S19E36	0	0	0			S19E36	Q	MAGQUIET
						S17E41	3	0	0			S17E41	Q	
						N10E76	1	0	0			N10E76	Q	
189	08	07	067	128	022	S11W32	2	0	0		08	S11W32	Q	SOLQUIET
						N18E12	0	0	0			N18E12	Q	MAGQUIET
						S19E23	0	0	0			S19E23	Q	
						S17E28	3	0	0			S17E28	E	
						N11E64	0	0	0			N11E64	E	
190	09	08	083	140	014	N18W03	0	0	0	Presto Tenflare	09	N18W03	Q	SOLALERT 09/11
						S19E10	1	0	0	220 Flux Units		S19E10	Q	MAGQUIET
						S16E14	1	0	0	08/0643Z Duration		S16E14	Q	
						N11E51	4	1	0	20 Minutes.Tenflare		N11E51	Q	
						S12E81	17	3	0	320 Flux Units 08/0640Z Duration 20 Minutes.		S12E81	E	
191	10	09	119	165	014	S10W33	0	0	0	Presto Soflare	10	S10W33	Q	MAJOR FLARE ALERT 10/XX 16513
						S19W01	0	0	0	X9/3B N17E73		S19W01	Q	MAGQUIET
						S16E02	1	0	0	09/0728Z Duration		S16E02	Q	
						N11E37	7	0	0	24 Minutes.Tenflare		N11E37	E	
						S22E48	1	1	0	2400 Flux Units		S22E48	Q	
						N13E65	20	7	2	09/0733Z Duration		N13E65	P	
						N07E78	4	0	0	13 Minutes.Soflare M8/2B N18E74 09/2105Z Duration 5 Minutes. Tenflare 435 Flux Units 09/2106Z Duration 46 Minutes.		N07E78	Q	
192	11	10	166	203	014	S10W47	4	1	0	Presto Tenflare	11	S10W47	Q	SOLALERT 11/XX
						N18W21	0	0	0	430 Flux Units		N18W21	Q	MAGQUIET
						S17W13	1	0	0	09/2106Z Duration		S17W13	Q	
						N10E23	1	0	0	5 Minutes.Tenflare		N10E23	E	
						S23E37	8	0	0	150 Flux Units		S23E37	E	
						N13E54	13	9	0	10/0830Z Duration		N13E54	A	
						S07E63	0	0	0	8 Minutes.Tenflare		S07E63	Q	
						S12E74	1	0	0	100 Flux Units 10/2106Z Duration 6 Minutes.Tenflare 150 Flux Units 10/2136Z Duration 10 Minutes.Tenflare 300 Flux Units 10/2313Z Duration 15 Minutes.		S12E74	Q	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JULY 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	Flares: No. of Total	Flares: M	Flares: X	Outstanding events	Forecasts: Date	Forecasts: Location Lat-Long	Forecasts: Desc*	Alert Situations
193	12	11	235	223	024	S10W63	0	0	0	Presto Tenflare	12	S10W63	Q	SOLALERT 12/XX
						N17W34	1	0	0	120 Flux Units		N17W34	Q	MAGALERT 12/XX
						S17W26	0	0	0	11/0206Z Duration		S17W26	Q	
						N10E10	0	0	0	3 Minutes. Proton		N10E10	Q	
						S24E24	7	1	0	Event Began 11/2320Z		S24E24	E	
						N13E41	25	9	0	11 Protons.Tenflare		N13E41	A	
						S07E51	0	0	0	100 Flux Units		S07E51	Q	
						S13E61	2	0	0	11/0418Z Duration		S13E61	Q	
						N13E73	0	0	0	6 Minutes.Tenflare		N13E73	Q	
										100 Flux Units				
										11/0636Z Duration				
										6 Minutes.				
194	13	12	320	245	026	N15W49	2	0	0	Presto Tenflare	13	N15W49	Q	MAJOR FLARE ALERT 13/14 12714
						N10W39	0	0	0	110 Flux Units		N10W39	Q	MAGALERT 13/14
						S17W37	0	0	0	11/2145Z Duration		S17W37	Q	
						N10W04	2	0	0	7 Minutes.Soflare		N10W04	Q	
						S24E12	7	2	0	X7/2B N11E37		S24E12	E	
						N14E27	12	5	1	12/0916Z Duration		N14E27	P	
						S06E38	1	0	0	98 Minutes.Tenflare		S06E38	Q	
						S12E48	0	0	0	470 Flux Units		S12E48	Q	
						N13E62	0	0	0	12/0913Z Duration		N13E62	Q	
						N21E71	0	0	0	24 Minutes.Tenflare		N21E71	Q	
						S04E72	0	0	0	1200 Flux Units		S04E72	Q	
										12/1003Z Duration				
										156 Minutes.Soflare				
										M2/2B N10E31				
										12/2035Z Duration				
										17 Minutes.				
195	14	13	277	250	080	N16W62	0	0	0	Presto Proton Event	14	N16W62	Q	MAJOR FLARE ALERT 14/16 11513
						N10W51	0	0	0	Began 12/0700Z 700		N10W51	Q	MAGALERT 14/16
						N10W19	3	0	0	Protons at 13/1430Z.		N10W19	Q	
						S24W02	13	3	0	PCA 12.5 DB at		S24W02	E	
						N13E15	6	1	0	13/1600Z, 1400		N13E15	P	
						S06E24	1	0	0	Protons at 13/1600Z.		S06E24	Q	
						S12E34	2	0	0	Strong Magstorm		S12E34	Q	
						N13E50	2	0	0	13/1800Z.Tenflare		N13E50	Q	
						N22E57	5	0	0	440 Flux Units		N22E57	Q	
						S04E57	0	0	0	12/0912Z Duration		S04E57	Q	
										12 Minutes.				
196	15	14	336	262	100	N15W76	2	0	0	Presto Magstorm	15	N15W76	Q	MAJOR FLARE ALERT 15 10114
						N11W65	0	0	0	13/1617Z. Soflare		N11W65	Q	MAGALERT 15
						N10W32	1	0	0	M1/2B N21E21		N10W32	Q	
						S25W16	6	0	0	14/1313Z Duration		S25W16	A	
						N14E01	16	4	0	31 Minutes.Soflare		N14E01	P	
						S06E10	1	0	0	M7/2B N18E48		S06E10	Q	
						N21E17	0	0	0	14/1725Z Duration		N21E17	Q	
						S12E21	7	0	0	9 Minutes.		S12E21	Q	
						N14E38	3	0	0			N14E38	Q	
						S20E43	1	0	0			S20E43	Q	
						N22E44	6	1	0			N22E44	Q	
						S04E44	0	0	0			S04E44	Q	
197	16	15	366	265	028	N15W90	0	0	0		16	N15W90	Q	MAJOR FLARE ALERT 16/XX 41214
						N10W82	0	0	0			N10W82	Q	MAGALERT 16
						S18W52	0	0	0			S18W52	Q	
						N10W45	0	0	0			N10W45	Q	
						S25W29	2	0	0			S25W29	E	
						N14W12	9	2	0			N14W12	P	
						S08W03	0	0	0			S08W03	Q	
						N20E04	0	0	0			N20E04	Q	
						S12E07	1	0	0			S12E07	Q	
						N12E30	4	0	0			N12E30	Q	
						S05E30	0	0	0			S05E30	Q	
						N20E31	7	2	0			N20E31	A	
						S21E31	0	0	0			S21E31	Q	
						N19E67	1	0	0			N19E67	Q	
198	17	16	397	271	035	N10W60	1	0	0	Presto Tenflare	17	N10W60	Q	PROTON FLARE ALERT17/19 42514
						S24W43	4	1	0	600 Flux Units		S24W43	E	MAGALERT 17/18
						N14W25	10	4	0	16/2345Z Duration		N14W25	P	
						S05W18	1	0	0	18 Minutes		S05W18	Q	
						S21W17	0	0	0			S21W17	Q	
						N20W11	1	0	0			N20W11	Q	
						S11W06	0	0	0			S11W06	Q	
						N12E15	6	0	0			N12E15	Q	
						S04E16	0	0	0			S04E16	Q	
						S20E16	0	0	0			S20E16	Q	
						N20E17	3	0	0			N20E17	E	
						S21E30	1	0	0			S21E30	Q	
						N19E54	2	0	0			N19E54	Q	
199	18	17	368	265	022	N11W73	2	0	0	Presto Tenflare	18	N11W73	Q	PROTON FLARE ALERT 18/20 43914
						S24W58	7	1	0	740 Flux Units		S24W58	Q	MAGALERT 18/19
						N14W39	15	3	1	17/0203Z Duration		N14W39	P	
						S05W32	0	0	0	21 Minutes. Soflare		S05W32	Q	
						S11W20	2	0	0	X3/2B N14W32		S11W20	E	
						N13E03	10	0	0	17/1025Z Duration		N13E03	E	

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JULY 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of obser-vation	Wolf number	10 cm solar flux	A index	Active Regions				Outstanding events	Forecasts			Alert Situations
						Location Lat-Long	No of Flares Total	M	X		Date	Location Lat-Long	Desc*	
						S04E03	0	0	0	17 Minutes.		S04E03	Q	
						N21E04	6	0	0	Tenflare 1200 Flux		N21E04	A	
						S21E04	0	0	0	Units 17/1013Z		S21E04	Q	
						S22E18	1	0	0	Duration 24 Minutes.		S22E18	Q	
						N18E42	1	0	0	Soflare M6/2B N18W25 17/2309Z Duration 19 Minutes. Tenflare 620 Flux Units 17/2309Z Duration 25 Minutes.		N18E42	Q	
200	19	18	377	246	020	N11W88	4	0	0		19	N11W88	Q	PROTON FLARE ALERT 19/XX
						S23W71	2	0	0			S23W71	E	MAGALERT 19/XX
						N14W54	11	1	0			N14W54	A	
						S05W45	2	0	0			S05W45	Q	
						S11W34	2	0	0			S11W34	E	
						N13W11	11	0	0			N13W11	E	
						N20W11	7	0	0			N20W11	E	
						S04W11	0	0	0			S04W11	Q	
						S20W10	0	0	0			S20W10	Q	
						S22E04	0	0	0			S22E04	Q	
						N18E28	1	0	0			N18E28	Q	
201	20	19	241	227	025	N15W66	16	6	1	Presto Tenflare	20	N15W66	A	MAJOR FLARE ALERT 20 46615
						S07W59	0	0	0	720 Flux Units		S07W59	Q	MAGALERT MINOR 20/21
						S10W46	1	0	0	19/0040Z Duration		S10W46	E	
						S03W24	0	0	0	40 Minutes.Soflare		S03W24	Q	
						S19W24	0	0	0	X1/2B N20W45		S19W24	Q	
						S20W23	3	1	0	19/0042Z Duration		S20W23	E	
						N14W22	9	1	0	46 Minutes. Tenflare		N14W22	A	
						S21W10	0	0	0	140 Flux Units		S21W10	Q	
						N18E14	3	0	0	19/0415Z Duration		N18E14	Q	
						N11E61	0	0	0	15 Minutes.		N11E61	Q	
202	21	20	241	190	018	N16W76	8	3	0	Presto Tenflare	21	N16W76	A	MAJOR FLARE ALERT 21/22 47616
						S06W74	0	0	0	100 Flux Units		S06W74	Q	MAGNIL
						S11W59	1	0	0	20/0410Z Duration		S11W59	E	
						N15W39	3	2	0	10 Minutes.		N15W39	A	
						S19W39	0	0	0			S19W39	Q	
						N20W37	4	0	0			N20W37	E	
						S04W37	0	0	0			S04W37	Q	
						S22W27	0	0	0			S22W27	Q	
						N19E02	2	0	0			N19E02	E	
						N12E47	0	0	0			N12E47	Q	
203	22	21	153	178	008	N15W87	5	2	0		22	N15W87	A	SOLALERT 22/23
						S12W73	0	0	0			S12W73	Q	MAGQUIET
						N14W53	2	0	0			N14W53	Q	
						S04E50	0	0	0			S04W50	Q	
						N22W47	1	0	0			N22W47	E	
						S23W41	0	0	0			S23W41	Q	
						N17W35	0	0	0			N17W35	Q	
						N18W12	0	0	0			N18W12	Q	
						N12E32	0	0	0			N12E32	Q	
						S18E58	1	0	0			S18E58	Q	
204	23	22	108	145	014	S12W85	1	0	0	Presto Tenflare	23	S12W85	E	SOLNIL
						N14W66	1	0	0	260 Flux Units		N14W66	E	MAGQUIET
						S04W64	0	0	0	22/1643Z Duration		S04W64	Q	
						N21W63	2	0	0	31 Minutes.Proton		N21W63	E	
						S23W53	0	0	0	Event 10 Protons		S23W53	Q	
						N15W47	0	0	0	22/2030Z.		N15W47	Q	
						N18W23	0	0	0			N18W23	E	
						S19E45	0	0	0			S19E45	Q	
205	24	23	095	125	012	N14W81	1	0	0		24	N14W81	E	SOLQUIET
						S05W78	0	0	0			S05W78	Q	MAGQUIET
						N22W77	3	0	0			N22W77	E	
						S23W67	0	0	0			S23W67	Q	
						N15W62	0	0	0			N15W62	Q	
						N17W37	0	0	0			N17W37	E	
						S05E11	0	0	0			S05E11	Q	
						S19E32	0	0	0			S19E32	Q	
206	25	24	045	140	032	N22W53	3	0	0		25	N22W53	Q	SOLQUIET
						N18W50	1	0	0			N18W50	Q	MAGALERT MINOR 25
						S20E21	3	0	0			S20E21	Q	
207	26	25	055	105	023	N21W69	3	0	0		26	N21W69	Q	SOLQUIET
						N17W64	0	0	0			N17W64	Q	MAGALET MINOR 26
						S01W33	0	0	0			S01W33	Q	
						S18E07	0	0	0			S18E07	Q	
208	27	26	063	099	023	N21W82	0	0	0		27	N21W82	Q	SOLQUIET
						N17W78	0	0	0			N17W78	Q	MAGNIL
						S20W07	0	0	0			S20W07	Q	
						S14E12	0	0	0			S14E12	Q	
						S12E23	0	0	0			S12E23	Q	
209	28	27	028	095	017	S14E09	0	0	0		28	S14E09	Q	SOLQUIET
						N06E42	0	0	0			N06E42	Q	MAGQUIET

ALERT PERIODS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

JULY 1982

SUMMARY OF THE GEOALERT WWA MESSAGES

Message serial number	Date of issue	Date of observation	Wolf number	10 cm solar flux	A index	Active Regions: Location Lat-Long	Flares: Total	Flares: M	Flares: X	Outstanding events	Forecasts: Date	Forecasts: Location Lat-Long	Forecasts: Desc*	Alert Situations
210	29	28	028	094	021	S13W07	0	0	0		29	S13W07	Q	SOLQUIET
						N06E27	0	0	0			N06E27	Q	MAGQUIET
211	30	29	044	095	020	N06W14	0	0	0		30	N06W14	E	SOLQUIET
						S12E64	2	0	0			S12E64	Q	MAGQUIET
						N15E80	0	0	0			N15E80	Q	
212	31	30	068	090	023	N07W00	0	0	0		30	N07W00	E	SOLQUIET
						S12E08	0	0	0			S12E08	Q	MAGQUIET
						S10E50	5	0	0			S10E50	E	
						N16E69	0	0	0			N16E69	Q	
213	01	31	085	111	024	S16W54	0	0	0		01	S16W54	Q	SOLQUIET
						N07W13	2	0	0			N07W13	E	MAGQUIET
						S12W06	0	0	0			S12W06	Q	
						S12E37	2	0	0			S12E37	E	
						N16E56	1	0	0			N16E56	E	

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

04 JULY 1982 TOYOKAWA 04/0728Z TENFLARE 250 FLUX UNITS 04/0640Z DURATION 45 MINUTES
08 JULY 1982 MEUDON 08/0845Z MAJOR FLARE NE LIMB FIRST OBSERVATION 08/0650Z IN PROGRESS RADIO BURST REPORTED BY BERNE AT 8400 MHZ START 08/0640Z MAX 0649Z DURATION 15 MINUTES 1200 FLUX UNITS
08 JULY 1982 BOULDER 08/1325Z TENFLARE 220 FLUX UNITS 08/0643Z DURATION 20 MINUTES
09 JULY 1982 TOYOKAWA 08/0755Z TENFLARE 320 FLUX UNITS 08/0640Z DURATION 20 MINUTES
09 JULY 1982 BOULDER 09/0713Z SOFLARE X9/3B N17E73 09/0731Z DURATION 24 MINUTES
09 JULY 1982 BOULDER 09/0713Z TYPE II RADIO EMISSION 09/0744Z
09 JULY 1982 BOULDER 09/0713Z TENFLARE 2400 FLUX UNITS 09/0733Z DURATION 13 MINUTES
09 JULY 1982 TOYOKAWA 09/0807Z TENFLARE 2100 FLUX UNITS 09/0733Z DURATION 20 MINUTES
09 JULY 1982 GORKY 09/1400Z RADIO BURST AT 9100 MHZ MAX FLUX 19600 FLUX UNITS BEGIN 0630Z MAX 0737Z IN PROGRESS
09 JULY 1982 BOULDER 09/2212Z SOFLARE M8/2B N18E74 09/2105Z DURATION 5 MINUTES
09 JULY 1982 BOULDER 09/2212Z TENFLARE 435 FLUX UNITS 09/2106Z DURATION 46 MINUTES
10 JULY 1982 TOYOKAWA 10/0040Z TENFLARE 430 FLUX UNITS 09/2106Z DURATION 5 MINUTES
11 JULY 1982 TOYOKAWA 11/0010Z TENFLARE 150 FLUX UNITS 10/083-Z DURATION 8 MINUTES
11 JULY 1982 TOYOKAWA 11/0010Z TENFLARE 100 FLUX UNITS 10/2106Z DURATION 6 MINUTES
11 JULY 1982 TOYOKAWA 11/0010Z TENFLARE 150 FLUX UNITS 10/2136Z DURATION 10 MINUTES
11 JULY 1982 TOYOKAWA 11/0010Z TENFLARE 300 FLUX UNITS 10/2313Z DURATION 15 MINUTES
11 JULY 1982 TOYOKAWA 11/0220Z TENFLARE 120 FLUX UNITS 11/0206Z DURATION 3 MINUTES
11 JULY 1982 TOYOKAWA 11/0430Z TENFLARE 100 FLUX UNITS 11/0418Z DURATION 6 MINUTES
11 JULY 1982 TOYOKAWA 11/0750Z TENFLARE 100 FLUX UNITS 11/0636Z DURATION 6 MINUTES
11 JULY 1982 BOULDER 11/1330Z PROTON EVENT BEGAN AT 10/2320Z 11 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV AT 11/0700Z
12 JULY 1982 TOYOKAWA 12/0025Z TENFLARE 110 FLUX UNITS 11/2145Z DURATION 7 MINUTES
12 JULY 1982 BOULDER 12/1200Z SOFLARE X7/2B N11E37 12/0916Z DURATION 98 MINUTES
12 JULY 1982 BOULDER 12/1200Z TENFLARE 470 FLUX UNITS 12/0913Z DURATION 24 MINUTES
12 JULY 1982 BOULDER 12/2208Z SOFLARE M2/2B N10E31 12/2035Z DURATION 17 MINUTES
12 JULY 1982 BOULDER 12/1904Z TENFLARE 1200 FLUX UNITS 12/1003Z DURATION 156 MINUTES
13 JULY 1982 TOYOKAWA 13/0115Z TENFLARE 440 FLUX UNITS 12/0912Z DURATION 12 MINUTES
13 JULY 1982 BOULDER 13/1512Z PROTON EVENT BEGAN AT 12/0700Z 700 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV AT 13/1430Z RISING
13 JULY 1982 BOULDER 13/1900Z STRONG MAGSTORM IN PROGRESS 13/1800Z
13 JULY 1982 BOULDER 13/1608Z POLCAP ABSORPTION BEGAN AT 12/2200Z 12.5 DB ABSORPTION AT 13/1600Z
13 JULY 1982 BOULDER 13/1608Z PROTON EVENT BEGAN AT 12/0700Z NOW 1400 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV AND RISING
14 JULY 1982 KAKIOKA 14/0100Z MAGSTORM 13/1617Z
14 JULY 1982 BOULDER 14/1835Z SOFLARE M1/2B N21E21 14/1313Z DURATIN 31 MINUTES
14 JULY 1982 BOULDER 14/1835Z SOFLARE M7/2B N18E48 14/1725Z DURATION 9 MINUTES
17 JULY 1982 TOYOKAWA 17/0130Z TENFLARE 600 FLUX UNITS 16/2345Z DURATION 18 MINUTES
17 JULY 1982 BOULDER 17/0245Z TENFLARE 740 FLUX UNITS 17/0203Z DURATION 21 MINUTES
17 JULY 1982 TOYOKAWA 17/0250Z TENFLARE 800 FLUX UNITS 17/0203Z DURATION 25 MINUTES
17 JULY 1982 BOULDER 17/1112Z SOFLARE X3/2B N14W32 17/1025Z DURATION 17 MINUTES
17 JULY 1982 BOULDER 17/1112Z TENFLARE 1200 FLUX UNITS 17/1031Z DURATION 24 MINUTES
18 JULY 1982 BOULDER 18/0020Z SOFLARE M6/2B N18W35 17/2309Z DURATION 19 MINUTES
18 JULY 1982 TOYOKAWA 18/0032Z TENFLARE 620 FLUX UNITS 17/2309Z DURATION 25 MINUTES
19 JULY 1982 TOYOKAWA 19/0135Z TENFLARE 720 FLUX UNITS 19/0040Z DURATION 40 MINUTES
19 JULY 1982 TOYOKAWA 19/0518Z TENFLARE 140 FLUX UNITS 19/0415Z DURATION 15 MINUTES
20 JULY 1982 BOULDER 20/0248Z SOFLARE X1/2B N20W45 19/0042Z DURATION 46 MINUTES
20 JULY 1982 BOULDER 20/0245Z TENFLARE 720 FLUX UNITS 19/0040Z DURATION 40 MINUTES
20 JULY 1982 TOYOKAWA 20/0513Z TENFLARE 100 FLUX UNITS 20/0410Z DURATION 10 MINUTES
22 JULY 1982 BOULDER 22/1750Z TENFLARE 260 FLUX UNITS 22/1643Z DURATION 31 MINUTES
22 JULY 1982 BOULDER 22/2030Z PROTON EVENT 10 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV

RELATIVE SUNSPOT NUMBERS

INTERNATIONAL, R_I

	1981 FINAL								1982 PROVISIONAL			
DAY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
1	121	205	216	165	193	92	258	168	145	63	70	50
2	105	183	206	222	197	94	241	174	115	57	83	41
3	112	160	219	218	212	112	232	175	151	46	94	33
4	109	170	189	221	212	109	221	177	137	58	104	42
5	113	195	195	233	219	112	219	163	112	63	111	50
6	102	220	169	199	234	86	230	165	117	64	108	32
7	107	205	171	192	244	94	226	146	130	69	115	33
8	115	208	185	184	249	97	232	140	131	89	127	49
9	121	190	177	134	258	98	211	116	132	47	142	61
10	138	196	144	147	253	85	181	122	138	53	147	110
11	136	164	131	146	263	46	158	119	152	58	138	146
12	140	138	123	160	240	52	156	135	142	75	144	177
13	134	132	171	158	185	51	162	155	148	78	139	219
14	140	148	187	178	159	58	142	153	136	58	137	222
15	153	129	212	139	113	81	134	140	127	52	125	234
16	134	138	223	126	66	76	111	156	122	69	128	263
17	125	129	219	103	80	111	120	180	108	76	136	272
18	148	145	210	108	79	139	103	168	91	89	134	220
19	175	156	189	90	74	143	107	167	87	110	134	200
20	188	137	183	82	57	134	119	160	93	112	139	180
21	222	175	145	82	65	134	120	153	91	98	143	129
22	220	172	145	73	75	121	100	146	109	121	146	99
23	200	137	118	65	86	93	97	144	138	107	116	74
24	178	135	109	59	68	70	120	122	145	110	112	27
25	189	142	101	60	62	82	128	152	149	88	92	25
26	215	153	92	60	100	119	136	147	150	117	94	37
27	222	181	75	77	104	125	154	182	126	130	49	22
28	214	195	92	130	136	168	163	179	90	108	36	19
29	194	191	131	148	132	216		169	85	102	32	23
30	233	190	152	165	112	211		162	75	66	38	38
31	216		156		126	237		132		89		54
MEAN	158.7	167.3	162.4	137.5	150.1	111.2	163.6	153.8	122.5	81.4	110.4	026.

1981 YEARLY MEAN = 140.4

* ZURICH R_z SUNSPOT NUMBER REPLACED BY INTERNATIONAL R_I SUNSPOT NUMBER BEGINNING WITH JANUARY 1981 DATA.

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1981					1982						
DAY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
1	183.9	248.3	210.6*	222.5*	230.7*	179.9	284.8*	231.3	172.2*	151.7	134.2	106.5
2	182.6	242.8	204.8*	241.3*	230.3*	177.2	279.7*	228.3	172.0*	147.4	135.1	106.9
3	192.4	229.0	196.5	255.3*	238.6	176.1	272.9*	230.1	169.9	147.7	141.5	109.4
4	190.6*	233.4	191.1	263.1	241.7	170.4	252.8*	238.3*	158.2	144.7	158.2*	111.5
5	178.8	248.7	193.6*	254.1	260.0	165.5	245.2	245.4*	159.9*	148.7	156.6*	114.1
6	179.6	263.2*	200.3	244.6	262.1	166.8	245.2	230.0*	165.2	153.0	149.6*	121.3
7	173.0	262.5*	204.1*	241.4	275.6*	166.9*	239.9	228.3	164.0*	151.0	158.6*	128.2*
8	178.4	266.3*	200.7*	234.7*	287.8	156.9	245.1*	207.1*	162.1*	150.8	167.3	150.3*
9	180.5	256.5	205.4*	232.6	292.4*	164.4	231.7	192.2	167.3*	139.8	177.4	176.6*
10	182.0	247.6	213.4	231.0*	278.7	145.7	213.7	178.9*	177.1*	130.7	196.0*	203.5*
11	206.4	240.8	220.0	217.0	266.7*	136.3	211.1*	178.2	178.7*	132.3	224.2	226.4*
12	209.0*	234.2	236.8*	223.5	254.2*	132.4	204.0*	181.2	177.5*	132.3	238.3*	239.7*
13	208.7	230.2	256.2	215.9	218.9	127.5	194.9*	185.5	170.9	129.8	240.2	252.6*
14	208.2	228.7*	275.6	207.4	193.0	130.5	185.3	201.3	157.9	132.2	240.8	269.2*
15	225.1	230.4	287.1	191.2	172.6	136.3	180.3	207.6*	152.2	132.1	235.8	274.0
16	221.8*	227.5	302.4	181.2	157.4	146.7	170.5	227.7	148.2	139.0	210.6*	269.4*
17	228.7	218.2*	302.9	172.7	144.2	152.6	162.5	230.4	145.9*	142.2*	206.0*	273.3
18	244.1	216.5*	296.5*	160.8*	136.3*	167.6	165.7	226.8	147.0	146.8	200.7*	247.2*
19	254.6*	210.5*	278.6	157.0	129.7	169.4	170.9*	219.7*	145.1	155.9	207.5	234.7
20	269.8	200.1	257.8*	152.0	133.9	167.0	171.3	217.0	144.2	155.6*	207.1	196.5
21	267.1*	191.2	238.2	153.9	142.2	163.3	165.2	212.4	145.2	165.4*	210.7	173.7*
22	262.2*	183.0	218.6	152.7	145.9	152.9	163.7	213.7	156.9*	158.8	197.2*	149.5*
23	254.8	183.8	208.2	151.9	153.0	148.0	173.1	202.4	175.2	155.7*	187.3	128.5
24	258.9	182.2	201.1	150.4	156.1*	149.1	185.9*	189.0	181.0	144.8*	168.2	117.8
25	254.8	182.0	186.0	159.1	162.1	169.3*	184.1	189.9	182.6*	145.7	159.1*	108.2
26	272.9*	188.8	172.0	178.3*	166.2	182.7*	204.0	192.8*	178.3	158.0	142.3	102.1
27	281.6*	202.8	171.2	190.3	176.8	197.2	222.1	195.4*	167.3	171.5*	127.6	97.8
28	275.3	200.9	182.4	206.4*	183.0	234.7	224.0	200.6	161.0*	171.3*	123.1	96.4
29	259.1	204.5	187.5	226.5*	183.6	267.0	.	198.0	155.6	170.9*	111.7	97.5
30	265.1	203.8	201.5	231.6	185.7	284.5	.	194.5*	149.8*	142.8	108.5	112.4
31	256.0*	.	207.1	.	182.8	289.1	.	184.1	.	136.7	.	114.4
MEAN	226.0	221.9	222.8	203.3	201.4	173.4	208.9	208.3	162.9	147.9	177.4	164.8

* adjusted for burst
A = interpolated data point

DAILY SOLAR INDICES

JULY 1982

DAY OF MONTH	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	PROVISIONAL SUNSPOT NUMBERS		OBSERVED FLUX	SOLAR FLUX ADJUSTED TO 1 A.U.								
			R_I	$R_{A'}$	OTTAWA 2800	AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245
1	182	13	50	42	103.0	569	227	130	106.5	105	107	83	32	19
2	183	14	41	29	103.4	572	235	132	106.9		101			
3	184	15	33	24	105.8	568	239	135	109.4	107	109	81	32	12
4	185	16	42	35	107.8	569	248	137	111.5	98	105	83	34	17
5	186	17	50	34	110.3	579	251	140	114.1	110	108	83	33	18
6	187	18	32	33	117.3	574	238	145	121.3	107	116	76	37	9
7	188	19	33	33	124.0*	583	268	156	128.2*	128	119	86	34	14
8	189	20	49	46	145.4*	579	267	166	150.3*	137	131	88	37	15
9	190	21	61	85	170.8*	595	326	202	176.6*	172	147	91	48	15
10	191	22	110	149	196.8*	631	372	240	203.5*	197	154	89	42	33
11	192	23	146	150	219.0*	619	361	252	226.4*	223	168	96	40	21
12	193	24	177	207	232.0*	627	381	280	239.7*	248	200	114	48	98
13	194	25	219	225	224.5*	630	419	314	252.6*	238	191	178	43	35
14	195	26	222	232	260.6*	570	405	326	269.2*	289	220	138	48	27
15	196	27	234	247	265.2	621	386	291	274.0	263	205	105	42	21
16	197	1	263	258	260.8*	581	361	293	269.4*	250	203	110	44	17
17	198	2	272	278	264.6				273.3					
18	119	3	220	271	239.3*	604	313	251	247.2*	240	198	115	40	23
19	200	4	200	209	227.2	620	320	246	234.7	236	200	117	42	19
20	201	5	180	166	190.2	544	283	200	196.5	196	173	99	38	25
21	202	6	129	125	168.3*				173.7*					
22	203	7	99	82	144.9*	572	237	142	149.5*	111	109	85	36	37
23	204	8	74	45	124.5				128.5					
24	205	9	27	29	114.1	587	250	142	117.8	112	103	87		12
25	206	10	25	26	104.8	564	247	136	108.2	107	101	83	34	14
26	207	11	37	22	98.9	546	241	131	102.1	95	93	81	33	14
27	208	12	22	20	94.9	563	248	125	97.8	103	88	76	33	19
28	209	13	19	16	93.5	503	199	119	96.4	80	93	68	33	10
29	210	14	23	30	94.6	558	234	121	97.5	94	88	74	35	16
30	211	15	38	48	109.0	557	255	141	112.4	115	100	76	32	18
31	212	16	54	61	111.1	567	251	139	114.4	110	97	77	35	16
MEAN			026.	051.	159.6	580	288	186	164.8	158	137	94	37	22

*Adjusted for burst.

NOTE: Data gaps in AFGL Sagamore Hill data are due to equipment problems.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

	SUNSPOT NUMBERS						2800 MHz FLUX Adjusted to 1 AU	
	Rz or R_I		Ra		Rs		Sa	
Date	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed
Aug 79	142.2	155	125.1	144	129.2	145	177.0	192
Sep	188.4	156	184.0	143	156.5	144	202.3	191
Oct	186.2	158	178.2	144	171.7	145	216.4	192
Nov	183.3	162	176.5	149	182.9	149	226.8	196
Dec	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140*	154.3	146	152.1	157	198.2	203
Aug	158.7	141*	170.4	147	182.1	158	226.0	203
Sep	167.3	143*	174.5	148	177.7	158	221.9	204
Oct	162.4	142*	157.0	146	178.6	156	222.8	202
Nov	137.5	139*	138.8	142	157.6	151	203.3	197
Dec	150.1	138*	145.0	140	155.5	149	201.4	195
Jan 82	110.7†	137*	110.4	135	124.2	148	173.4	195
Feb	162.6†	133(+ 4)*	161.0	131	163.6	143	208.9	---
Mar	153.7†	130(+ 5)*	155.5	128	163.0	140	208.3	---
Apr	122.5†	126(+ 7)*	121.9	125	113.9	137	162.9	---
May	81.4†	122(+ 9)*	82.6	121	97.7	132	147.9	---
Jun	110.4†	118(+12)*	113.5	117	129.6	128	177.4	---
Jul	102.6†	113(+12)*	---	112	116.0	122	164.8	---
Aug	---	107(+11)*	---	106	---	115	---	---
Sep	---	102(+10)*	---	101	---	109	---	---
Oct	---	95(+ 9)*	---	94	---	101	---	---
Nov	---	91(+10)*	---	90	---	97	---	---
Dec	---	87(+11)*	---	86	---	92	---	---
Jan 83	---	83(+11)*	---	82	---	88	---	---

*An asterisk denotes either a value of the observed 12-month running mean or a predicted 12-month average that is based on preliminary observations of the Zurich and International relative sunspot numbers (R_Z and R_I). Parentheses enclose the 90% confidence limits. Shaded boxes enclose the most recent smoothed values; boxes not shaded enclose predicted values. Ra is the new symbol for R_A'. All tabulated entries of Ra are final values.

†R_I replaces R_Z as of January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	130	126	122	118	113	107	102	95	91	87
		(4)	(5)	(7)	(9)	(12)	(12)	(11)	(10)	(9)	(10)	(11)
1983	83	80	79	77	74	72	70	69	68	68	68	67
	(11)	(11)	(11)	(12)	(13)	(15)	(17)	(19)	(21)	(22)	(23)	(23)
1984	65	63	58	54	52	51	50	48	46	44	42	40
	(24)	(24)	(25)	(27)	(28)	(29)	(30)	(30)	(29)	(28)	(27)	(27)
1985	38	37	37	37	35	33	32	31	30	30	29	28
	(27)	(26)	(25)	(25)	(25)	(24)	(23)	(22)	(22)	(23)	(23)	(23)
1986	28	27	26	24	23	21	19	17	17	16	16	15
	(24)	(24)	(23)	(23)	(22)	(21)	(20)	(19)	(18)	(17)	(15)	(14)
1987	15	15	15	16	17	18	20					
	(12)	(12)	(12)	(13)	(14)	(15)	(16)					

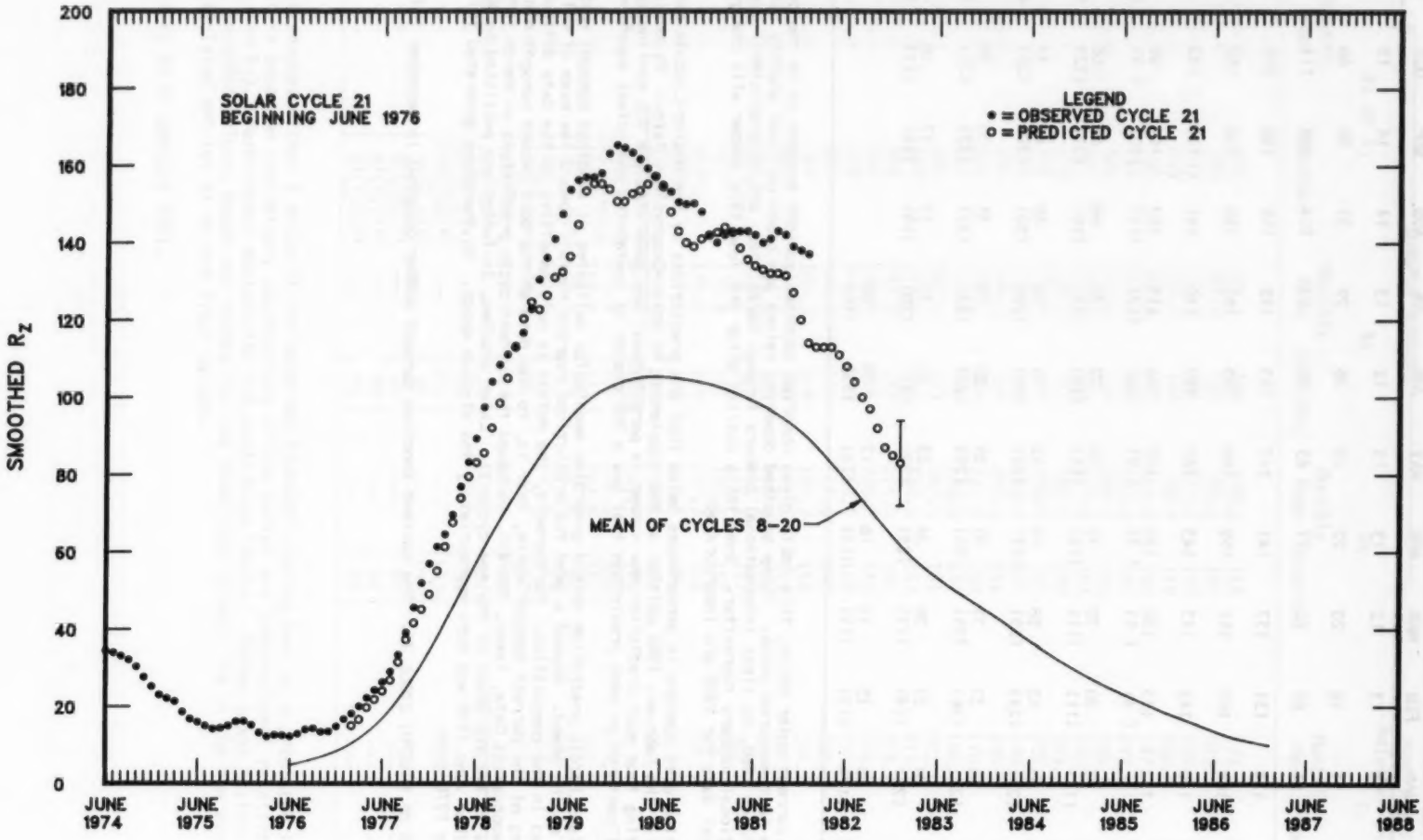
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the last measured value. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through March 1982, and on provisional monthly mean international numbers thereafter. Some table entries after the June 1976 number will change slightly when final data for 1982 are incorporated.

The entries with numbers in parentheses below them are predictions by the McNish-Lincoln method. (See page 10 in the February 1982 edition of the supplement to Solar-Geophysical Data.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval--an interval centered on each prediction that has a 90% chance of containing the actual smoothed value.

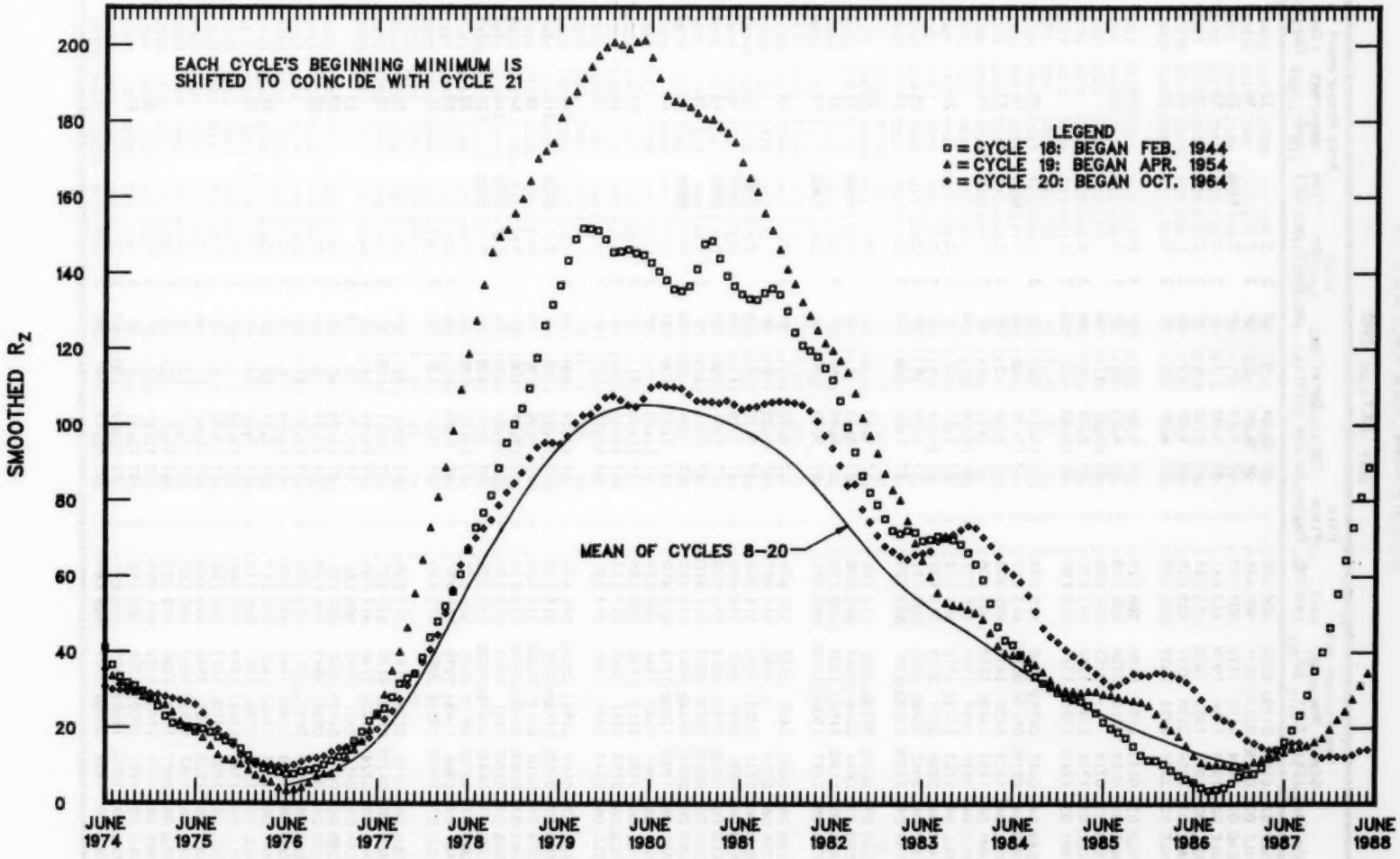
The McNish-Lincoln prediction method generates meaningful estimates of smoothed sunspot numbers for no more than 12 months ahead. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In Solar-Geophysical Data, Issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



SUPERPOSITION OF CYCLES 18, 19, AND 20



13 Jul 82

H - ALPHA SOLAR FLARES

JULY 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
PALE	02	0159E	0159U	0208	N06	W46		06	28.64	9D	SF	2	C		32		3788
PALE	02	0225E	0227U	0231	N06	W46		06	28.66	6D	SF	2	C		36		3788
WEND	02	1104	1110	1119	N07	E23		07	4.19	15	SN		C	1110	28	.3	H
PALE	02	1952	1956	1959	S12	E41		07	5.92	7	SF	3	C		30		3798
HOLL	02	1952	1953	1958	S13	E41		07	5.92	6	SF	3	C		26		3798
PALE	02	2238	2239	2257	S05	E25		07	4.81	19	SF	2	C		32		S K 3799
PALE	02	2238	2254	2257	S05	E25		07	4.81	19	SF	2	C		37		K 3799
PALE	03	0143	0152	0156	S08	E19		07	4.50	13	SF	3	C		38		3799
PALE	03	0158	0218	0224	S08	E18		07	4.43	26	SF	1	C		29		3799
ISTA	03	0738		0755	S20	E90		07	10.21	17	SN						
HOLL	03	1738	1741	1744	S17	E79		07	9.74	6	SN	3	C				
RAMY	03	1740E	1740U	1747	S18	E90		07	10.59	7D	SN	3	C				
LEAR	04	0440	0451	0540	S15	E78		07	10.10	60	SB	2	C		75		YF
YUNN	04	0515E	0517U	0517D	N13	E87		07	10.79	2D	SN		P	0517	16		A
HOLL	04	1438	1438	1443	N05	W06		07	4.16	5	SF	3	C		37		F 3797
RAMY	04	1439	1442	1443	N05	W06		07	4.16	4	SF	3	C		29		3792
HOLL	04	1640	1644	1701	S16	E71		07	10.08	21	SN	2	C				3801
HOLL	04	1703	1703	1712	S11	E12		07	5.61	9	SF	2	C		22		F 3798
RAMY	04	2026	2027	2035	S16	E71		07	10.24	9	SF	3	C				
RAMY	04	2042	2046	2100	S09	E12		07	5.76	18	SF	3	C		25		3794
LEAR	04	2335E	2335U	2351	S12	E09		07	5.66	16D	SN	2	C		40		3798
LEAR	05	0643E	0644U	0649	S13	E02		07	5.43	6D	SN	2	C		20		3798
PEKG	05	0644	0646	0649	S13	E06		07	5.73	5	SN		P	0646	21	.2	D
RAMY	05	1148E	1156	1203	S18	E59		07	9.99	15D	SF	3	C		23		3802
WEND	05	1257	1300	1306D	N13	E51		07	9.39	9D	SF		C	1300	22	.4	
LEAR	06	0420	0422	0439	S10	W06		07	5.73	19	SF	2	C		30		3798
ISTA	06	0732		0740	S11	W07		07	5.79	8	SF						D
WEND	06	0733	0737	0742	S11	W08		07	5.71	9	SN		C	0737	12	.1	D
WEND	06	0838	0841	0851	S10	W08		07	5.76	13	SN		C	0841	30	.3	
PEKG	06	0842E	0842U	0858	S10	W10		07	5.61	16D	SN		P	0842	42	.4	D
LEAR	06	0842E	0843U	0853	S11	W10		07	5.61	11D	SF	2	C		39		F 3798
YUNN	06	0844E	0844U	0849	S10	W10		07	5.61	5D	SN		P	0844	32	.3	D
RAMY	06	1208E	1208U	1218	S11	W10		07	5.75	10D	SN	3	C		44		3798
HOLL	06	1942	1942	1946	N08	E79		07	12.75	4	SF	3	C				3803
HOLL	06	2105	2117	2136	S20	E45		07	10.32	31	SF	3	C		62		3802
HOLL	06	2150	2151	2200	S17	E42		07	10.10	10	SF	3	C		18		3802
HOLL	06	2340	2341	2350	S17	E41		07	10.10	10	SF	3	C		75		F 3802
PALE	07	0149	0154	0257D	S16	E39		07	10.04	68D	1N	3	C		187		F 3802
PEKG	07	0155E	0156U	0205	S18	E39		07	10.05	10D	1F		P	0156	210	3.0	F
YUNN	07	0210	0213	0220D	S17	E38		07	9.98	10D	SN		P		48	.7	ET
YUNN	07	0240E	0243	0250D	S18	E40		07	10.16	10D	SN		P		64	.9	FT
PEKG	07	0420E	0421	0445	S18	E38		07	10.08	25D	1N		C	0421	244	3.7	F
YUNN	07	0444E	0445U	0526D	S19	E36		07	9.95	42D	1B		P	0445	177	2.5	FT
YUNN	07	0812E	0815U	0825	N09	E75		07	12.97	13D	SN		P		32		DT
RAMY	07	1946	1949	1958	S11	W31		07	5.49	12	SB	3	C		69		3798
PALE	07	1951E	1951U	2004D	S10	W30		07	5.57	13D	SB	3	C		61		3798
HOLL	08	0118	0124	0142	S17	E26		07	10.03	24	SF	3	C		33		3802
PALE	08	0121E	0122U	0138	S16	E27		07	10.11	17D	SF	3	C		32		F 3802
PALE	08	0224	0227	0248	N17	E90		07	14.94	24	SF	3	C				
LEAR	08	0416	0421	0516	N09	E61		07	12.76	60	SN	3	C		43		K 3803
LEAR	08	0416	0447	0516	N09	E61		07	12.76	60	SB	3	C		97		FEK 3803
LEAR	08	0535	0536	0543	N09	E60		07	12.74	8	SN	3	C		22		F 3803
LEAR	08	0650	0653	0717	N10	E88		07	14.90	27	1N	3	C				F
HOLL	08	1338	1340	1344	N10	E84		07	14.88	6	SF	3	C				
RAMY	08	1343	1346	1401	S20	E17		07	9.87	18	SF	3	C		51		3801
HOLL	08	1343	1346	1407	S20	E16		07	9.80	24	SF	3	C		46		3801
HOLL	08	1345	1347	1349	N10	E84		07	14.89	4	SF	3	C				
HOLL	08	1408	1410	1414	N10	E84		07	14.90	6	SF	3	C				
HOLL	08	1523	1525	1540	N10	E85		07	15.03	17	SN	3	C				3804
HOLL	08	1553	1553	1607	N09	E80		07	14.67	14	SF	3	C				3804
HOLL	08	1657	1659	1720	N09	E87		07	15.24	23	SF	3	C				3804
RAMY	08	1707	1707	1729	N11	E55		07	12.85	22	SF	3	C		22		3803
HOLL	08	1707	1707	1716	N09	E56		07	12.92	9	SF	3	C		16		3803
HOLL	08	1802E	1802U	1827	N09	E91		07	15.59	25D	SN	3	C				3804
HOLL	08	1939	2003U	2027	N09	E84		07	15.13	48	SB	3	C				3804

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
PALE	08	1945E	2003	2026D	N11	E85		07	15.22	41D	SB	3	C					3804
HOLL	08	2041E	2041U	2045	N18	E78		07	14.81	4D	SF	1	C					3804
HOLL	08	2101	2105U	2109	N09	E84		07	15.18	8	SF	2	C					3804
HOLL	08	2150	2153	2157	N09	E83		07	15.14	7	SF	3	C					3804
HOLL	08	2255	2259	2306	N08	E85		07	15.33	11	SN	2	C					3804
HOLL	08	2315E	2317	2318D	N09	E82		07	15.13	3D	SN	2	C					3804
LEAR	08	2345E	2345U	0016	N15	E77		07	14.82	31D	SN	3	C					3804
LEAR	09	0018	0036	0121	N10	E77		07	14.80	63	1B	3	C				FE	3804
PALE	09	0024	0038	0303	N12	E80		07	15.05	159	1B	3	C				F	3804
PALE	09	0028	0031	0048	N10	E50		07	12.78	20	SN	3	C		63			3803
LEAR	09	0154	0155	0200	N09	E49		07	12.76	6	SN	3	C		39		F	3803
LEAR	09	0217	0232	0246	N14	W77		07	3.27	29	SF	3	C					3796
LEAR	09	0251	0251	0301	N10	E78		07	14.98	10	SN	3	C					3804
LEAR	09	0308	0310	0327	N09	E49		07	12.81	19	SN	3	C		52		F	3803
LEAR	09	0310	0317	0318	N10	E77		07	14.92	8	SF	3	C					3804
PALE	09	0311	0335	0346D	N11	E80		07	15.16	35D	SN	2	C				F	3804
PALE	09	0342	0356	0356D	N10	E50		07	12.91	14D	SF	2	C		36			3803
LEAR	09	0415	0415	0429	N10	E76		07	14.89	14	SN	3	C				F	3804
LEAR	09	0439	0442	0445	N09	E46		07	12.65	6	SF	3	C		22			3803
LEAR	09	0523	0523	0529	N10	E76		07	14.94	6	SN	3	C					3804
WEND	09	0548	0554	0607	N12	E80		07	15.27	19	SN		C	0554	44			
BUCA	09	0730	0737	0820	N16	E77		07	15.16	50	3N		C	0737	644			
LEAR	09	0731	0738U	0916D	N17	E73		07	14.86	105D	3B	3	C				ZK	3804
LEAR	09	0731	0800	0916D	N17	E73		07	14.86	105D	2B	3	C		392		K	3804
WEND	09	0732E	0738	0829	N19	E78		07	15.27	57D	2B		C	0738	360			
WEND	09	0848		0947	N12	E79		07	15.32	59	1N		C	0905	63		A	
WEND	09	1050	1054	1102	N19	E76		07	15.26	12	1F		C	1054	100			
RAMY	09	1117	1131	1137D	N12	E73		07	14.97	20D	2B	3	C				Y	3804
RAMY	09	1130E	1619	1625D	N12	E73		07	14.98	295D	2B	3	C				ZY	3804
HOLL	09	1334E	1334	1418	N12	E73		07	15.07	44D	SN	3	C		45		K	3804
HOLL	09	1334E	1416U	1418	N12	E73		07	15.07	44D	SN	3	C		14		F K	3804
HOLL	09	1445	1500	1510	N10	E76		07	15.33	25	SN	3	C				F	3804
HOLL	09	1518	1519	1527	N09	E74		07	15.20	9	SN	3	C				F	3804
HOLL	09	1605	1606	1614	S09	E82		07	15.83	9	SF	3	C					
HOLL	09	1609	1611	1624	S22	E13		07	10.67	15	SF	3	C		26		F	3802
WEND	09	1615		1646	N12	E73		07	15.18	31	1N		C	1636	150			
HOLL	09	1616	1623	1650	S09	E85		07	16.06	34	SF	3	C					3807
HOLL	09	1652	1654	1657	S09	E85		07	16.09	5	SF	3	C		8			3807
HOLL	09	1658	1706	1716	N09	E73		07	15.19	18	SN	3	C				F	3804
HOLL	09	1806	1807	1816	S09	E81		07	15.84	10	SF	3	C					3807
HOLL	09	1836	1841	1903	N09	E71		07	15.11	27	SB	3	C		57			3804
HOLL	09	1918	1922	1925	N09	E72		07	15.21	7	SF	3	C		13			3804
HOLL	09	1926	2108	2228	N09	E71		07	15.14	182	1B	3	C		206		FHK	3804
HOLL	09	1926	2123	2228	N09	E71		07	15.14	182	1N	3	C		123		K	3804
PALE	09	2018	2023	2115D	N18	E74		07	15.49	57D	1B	3	C		239		K	3804
PALE	09	2018	2109	2115D	N18	E74		07	15.49	57D	2B	3	C				F K	3804
PALE	09	2018E	2023U	2025D	N11	E71		07	15.19	7D	1B	2	C		239		F	3804
PALE	09	2147	2153	2156	N13	W88		07	3.26	9	SN	3	C					3796
PALE	09	2211	2225	2233	S23	E54		07	14.09	22	SN	3	C		17			3806
PALE	09	2238	2238	2309	S25	E53		07	14.05	31	SF	3	C		14		K	3806
PALE	09	2238	2306	2309	S25	E53		07	14.05	31	SN	3	C		61		K	3806
HOLL	09	2254	2305	2356	N09	E69		07	15.14	62	SB	3	C		67		E	3804
HOLL	09	2257	2259	2307	N08	E39		07	12.88	10	SF	3	C		55		F	3803
PALE	09	2306	2314	2317	N10	E40		07	12.97	11	SN	3	C		29			3803
HOLL	10	0018	0032	0042	N08	E68		07	15.11	24	SB	3	C		72		FE	3804
LEAR	10	0111	0130	0235	N18	E68		07	15.23	84	SN	3	C		29		K	3804
LEAR	10	0111	0201	0235	N18	E68		07	15.23	84	1B	3	C		241		FEK	3804
HOLL	10	0112	0133	0201D	N19	E61		07	14.71	49D	SB	3	C		82		FE	3804
PALE	10	0140	0140	0154	S10	W34		07	7.51	14	SF	3	C		20			3805
PALE	10	0152	0212	0214	S23	E51		07	14.01	22	SN	3	C		26			3806
PALE	10	0257	0312	0317	S23	E51		07	14.05	20	SF	3	C		19			3806
LEAR	10	0307	0308	0314	N14	E67		07	15.20	7	SN	3	C		22			3804
PALE	10	0309	0320	0329	S11	W36		07	7.42	20	SF	3	C		24			3805
PALE	10	0315	0316	0325	S17	E00		07	10.14	10	SF	3	C		21			3802
LEAR	10	0316	0318	0324	N16	E69		07	15.37	8	SB	3	C		53		E	3804
PALE	10	0318	0327	0329	S23	E50		07	13.99	11	SF	3	C		20			3806
LEAR	10	0325	0325	0330	N10	E68		07	15.26	5	SN	3	C		21		F	3804
LEAR	10	0402	0409	0451D	N16	E69		07	15.41	49D	1B	3	C		134		E	3804
YUNN	10	0437E	0437U	0443D	N12	W89		07	3.48	6D	1N		P	0437	80		AG	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
YUNN	10	0600	0605	0614	N15	E72		07 15.70	14	1B		C		80		DT
WEND	10	0600	0604	0614	N17	E67		07 15.35	14	SN		C	0604	38		
YUNN	10	0651	0655	0700	N15	E70		07 15.59	9	SN		C		32		DT
WEND	10	0654	0658	0708	S24	E46		07 13.84	14	SF		C	0658	56	.9	
YUNN	10	0655	0658	0708	S25	E48		07 14.01	13	SN		C		48	.9	E
WEND	10	0717	0725	0733	N16	E67		07 15.39	16	SN		C	0725	63		
WEND	10	0826	0840	0909	N16	E64		07 15.21	43	1F		C	0840	118		
YUNN	10	0850E	0850U	0900	N12	E62		07 15.04	10D	SN		P	0850	80	1.7	ET
WEND	10	0957	1000	1006	S24	E45		07 13.89	9	SF		C	1000	88	1.4	
WEND	10	1004	1010	1018D	N16	E65		07 15.35	14D	SN		C	1010	85		
WEND	10	1306	1310	1312	N12	E57		07 14.84	6	SF		C	1310	31	.6	
HOLL	10	1512E	1512U	1517	N14	E63		07 15.40	5D	SN	3	C		23		F 3804
HOLL	10	1525	1527	1550	N10	E57		07 14.93	25	SN	3	C		92		F 3804
HOLL	10	1532	1605	1717	S26	E42		07 13.91	105	SN	3	C		70		K 3806
HOLL	10	1532	1617	1717	S26	E42		07 13.91	105	SB	3	C		185		K 3806
WEND	10	1606	1622	1639	S24	E42		07 13.92	33	1N		C	1622	150	2.3	
HOLL	10	1615	1619	1709	N10	E55		07 14.81	54	SB	3	C		47		FE 3804
WEND	10	1617	1622	1639	N11	E55		07 14.82	22	SF		C	1622	44	.8	
HOLL	10	1706	1707	1807	S13	E80		07 16.75	61	SF	3	C				3809
PALE	10	1713	1747	1852	S23	E42		07 13.96	99	1N	3	C		200		F 3806
PALE	10	1713	1743	1928	N11	E58		07 15.08	135	1N	3	C		192		FE 3804
HOLL	10	1717	1717	1733	N09	E52		07 14.63	16	SN	3	C		20		F 3804
HOLL	10	1746	1748	1800	S24	E39		07 13.75	14	SN	3	C		39		F 3806
HOLL	10	1821	1832	1839	S25	E40		07 13.86	18	SN	3	C		31		F 3806
HOLL	10	1853	1854	1914	S21	W15		07 9.64	21	SN	3	C		76		F 3805
HOLL	10	1950	2013	2014D	N09	E52		07 14.73	24D	1B	3	C		214		E 3804
PALE	10	1953	2024	2201	N17	E60		07 15.39	128	SB	3	C		23		FE 3804
HOLL	10	2001	2016	2158	N09	E52		07 14.74	117	1B	3	C		319		K 3804
HOLL	10	2001	2147	2158	N09	E52		07 14.74	117	SB	3	C		81		K 3804
HOLL	10	2011	2014	2019	S24	E37		07 13.70	8	SN	3	C		37		3806
PALE	10	2045	2055	2122	S23	E40		07 13.95	37	SB	3	C		163		3806
HOLL	10	2210	2215	2302	S19	W15		07 9.78	52	1N	3	C		316		3805
HOLL	10	2242	2254	2349	N11	E26		07 12.90	67	1N	3	C		232		3803
PALE	10	2244	2255	2332	N12	E25		07 12.83	48	1B	3	C		207		3803
PEKG	10	2320	2321	2328	N14	E54		07 15.06	8	SB		C	2321	76	1.3	D
HOLL	10	2321	2321	2333	N13	E55		07 15.13	12	SB	3	C		84		3804
HOLL	11	0031	0031	0124D	S11	E69		07 16.22	53D	SF	3	C		8		K 3809
HOLL	11	0031	0058	0124D	S11	E69		07 16.22	53D	1N	3	C		121		K 3809
PEKG	11	0129	0133	0139	S24	E35		07 13.77	10	SF		C	0133	50	.7	D
PALE	11	0201	0202	0215	S23	E37		07 13.94	14	SF	3	C		32		3806
PALE	11	0206	0209	0210D	N15	E53		07 15.10	4D	SB	3	C		68		3804
PEKG	11	0230	0236	0245	N13	E53		07 15.11	15	SN		C	0236	84	1.4	E
PALE	11	0234	0240	0255	N14	E52		07 15.04	21	SB	3	C		52		3804
PALE	11	0235	0237	0247	S23	E37		07 13.96	12	SB	3	C		34		3806
PALE	11	0311	0313	0321	N14	E52		07 15.07	10	SB	3	C		43		3804
YUNN	11	0345E	0345U	0355	N15	E55		07 15.32	10D	SN		P	0345	32	.6	ET
PEKG	11	0418	0421	0434	N14	E52		07 15.11	16	SN		C	0421	71	1.2	EU
YUNN	11	0446E	0446U	0452D	N17	E54		07 15.31	6D	SN		P	0446	48	.9	ET
YUNN	11	0617E	0617U	0625	N13	E51		07 15.11	8D	SN		P	0617	32	.5	DT
YUNN	11	0640	0645	0650	N12	E51		07 15.12	10	1N		C		129	2.1	FT
BUCA	11	0655	0700	0710	N12	E53		07 15.28	15	1F		C	0700	161	2.7	
BUCA	11	0715	0725	0800	N20	E65		07 16.28	45	2F		C	0725	344	8.3	E
YUNN	11	0718	0720	0739	N23	E68		07 16.55	21	SN		C		32		DG
ISTA	11	0733		0739	N19	E58		07 15.74	6	SF						D
YUNN	11	0739	0743	0747	N12	E49		07 15.01	8	SN		C		48	.8	ET
LEAR	11	0739	0741	0747	N13	E49		07 15.02	8	SB	3	C		43		3804
YUNN	11	0751E	0751U	0757	N10	E50		07 15.09	6D	SN		P	0751	32	.5	ET
LEAR	11	0807	0816	0832	N14	E50		07 15.12	25	SB	3	C		53		3804
PEKG	11	0817	0818	0821	N14	E49		07 15.05	4	SN		C	0818	84	1.3	E
LEAR	11	0828	0830	0834	N17	W24		07 9.53	6	SF	3	C		30		3808
LEAR	11	0837	0839	0853	N09	E49		07 15.04	16	SN	3	C		32		F 3804
YUNN	11	0846	0850U	0850D	N19	E56		07 15.64	4D	SN		P	0850	32	.6	EFT
YUNN	11	0846E	0846U	0850D	N08	E50		07 15.12	4D	SN		P	0846	64	1.0	ET
YUNN	11	0930	0935	0945D	N15	E54		07 15.49	15D	SN		P		32	.6	DT
WEND	11	0930	0941	0947D	N17	E54		07 15.50	17D	SN		C	0941	25	.6	
PEKG	11	0938	0942	0944	N17	E53		07 15.43	6	SN		C	0942	88	1.5	ET
WEND	11	1133E	1135	1145	N15	E50		07 15.27	12D	SN		C	1135	44	.7	
RAMY	11	1222E	1248	1405D	N14	E48		07 15.15	103D	SB	3	C		160		K 3804
RAMY	11	1222E	1301	1405D	N14	E48		07 15.15	103D	2B	3	C		615		K 3804
WEND	11	1235	1244	1304	N11	E46		07 14.99	29	SN		C	1244	63	.9	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	11	1239	1246	1255	S23	E30		07	13.84	16	SF	3	C		33		3806
HOLL	11	1337	1352	1352D	N12	E52		07	15.49	15D	SB	3	C		178		FE 3804
WEND	11	1341	1404	1420	N10	E46		07	15.03	39	2N		C	1404	388	5.9	
RAMY	11	1344	1347	1359	S14	E68		07	16.72	15	SF	3	C		59		3809
RAMY	11	1431	1442	1524	S24	E29		07	13.85	53	SN	3	C		37		3806
WEND	11	1433	1447	1510	S24	E30		07	13.93	37	SF		C	1447	56	.7	
WEND	11	1520	1523	1530	N10	E45		07	15.02	10	SF		C	1523	94	1.4	
HOLL	11	1553	1554	1601	N10	E42		07	14.82	8	SN	3	C		23		F 3804
WEND	11	1603	1605	1609	N19	E49		07	15.41	6	SN		C	1605	81	1.3	
HOLL	11	1603	1604	1609	N18	E48		07	15.33	6	SB	3	C		47		3804
HOLL	11	1620	1626	1648	S25	E27		07	13.77	28	SN	3	C		36		F 3806
RAMY	11	1623	1626	1640	S23	E28		07	13.84	17	SN	3	C		29		3806
HOLL	11	1630	1631	1636	N10	E43		07	14.92	6	SN	3	C		38		F 3804
HOLL	11	1642	1720	1720D	N18	E47		07	15.28	38D	1B	3	C		212		FE 3804
WEND	11	1643	1708	1729	N13	E50		07	15.47	46	2N		C	1708	488	8.0	E
PALE	11	1706	1708	1710D	N14	E44		07	15.04	4D	SB	3	C		133		3804
WEND	11	1758	1805	1817	S24	E28		07	13.91	19	SF		C	1805	113	1.4	
RAMY	11	1802	1803	1813	S23	E28		07	13.91	11	SN	3	C		32		3806
RAMY	11	1815	1815	2102	N16	E45		07	15.18	167	SB	3	C		40		3804
HOLL	11	1933	1937	1947	N13	E45		07	15.21	14	SB	3	C		114		3804
HOLL	11	2003	2005	2011	N14	E46		07	15.31	8	SB	3	C		31		3804
PEKG	11	2309	2311	2318	N10	E39		07	14.90	9	1N		P	2311	273	3.6	F
PEKG	11	2309E	2322	0029	N10	E42		07	15.12	80D	2N		C	2322	547	7.6	F
HOLL	11	2344	0103	0114	N13	E42		07	15.16	90	1B	3	C		375		FEK 3804
HOLL	11	2344	2344	0114	N13	E42		07	15.16	90	1B	3	C		317		K 3804
LEAR	12	0053E	0100U	0110	N14	E42		07	15.21	17D	1B	3	C		210		E 3804
PEKG	12	0058	0105	0105D	N14	E41		07	15.14	7D	SN		P	0105	97	1.3	E
HOLL	12	0103	0123	0132D	N13	E13		07	13.03	29D	SF	3	C		118		3803
HOLL	12	0113	0115	0132D	S23	E22		07	13.75	19D	SF	3	C		40		3806
YUNN	12	0244E	0244U	0248D	S24	E21		07	13.74	4D	SN		P	0244	48	.6	ET
PEKG	12	0310	0312	0318	N20	E47		07	15.73	8	1N		C	0312	197	3.1	F
YUNN	12	0310	0315U	0325	N18	E49		07	15.87	15	1B		P	0315	273	4.3	FT
LEAR	12	0310E	0314U	0327	N19	E46		07	15.64	17D	SB	3	C		110		FE 3804
PEKG	12	0315	0316	0323D	N19	E35		07	14.81	8D	SN		P	0316	84	1.1	E
YUNN	12	0315	0325U	0325D	N09	E36		07	14.84	10D	SB		P	0325	129	1.6	FT
LEAR	12	0320E	0323U	0355	N11	E43		07	15.38	35D	SB	3	C		125		FE 3804
YUNN	12	0337E	0337U	0340D	N08	E36		07	14.85	3D	SN		P	0337	48	.6	DT
LEAR	12	0402E	0403	0410	N10	E38		07	15.03	8D	SN	3	C		35		3804
YUNN	12	0456	0500	0513D	N08	E34		07	14.76	17D	SN		P		80	1.0	ET
LEAR	12	0500E	0500U	0512D	N10	E35		07	14.84	12D	SB	3	C		118		FE 3804
YUNN	12	0539	0544	0604	N08	E35		07	14.86	25	SN		C		32	.4	D
YUNN	12	0608	0620	0620	N10	E36		07	14.96	12	2B		C		450	5.8	FT
YUNN	12	0623	0628	0655	S24	E20		07	13.81	32	SB		C		129	1.6	FT
LEAR	12	0624	0637	0737D	S25	E08		07	12.89	73D	SB	3	C		177		FEK 3806
LEAR	12	0624	0722	0737D	S25	E08		07	12.89	73D	SB	3	C		166		K 3806
WEND	12	0646E		0705D	N11	E36		07	14.99	19D	1N		C	0647	319	4.1	
ISTA	12	0725E		0810	N12	E39		07	15.25	45D	2N						E
YUNN	12	0747	0752	0753D	S23	E19		07	13.79	6D	SB		P		113	1.4	FT
YUNN	12	0747E	0747U	0753D	N11	E39		07	15.26	6D	1B		P	0747	386	5.1	BFT
ISTA	12	0750		0812	S24	E19		07	13.79	22	1B						E
WEND	12	0754E		0824D	S22	E20		07	13.87	30D	SN		C	0754	106	1.3	
WEND	12	0754E		0905D	N12	E35		07	14.97	71D	1N		C	0820	394	5.1	
YUNN	12	0809E	0809U	0820	S24	E20		07	13.89	11D	SB		P	0809	48	.6	BT
YUNN	12	0809E	0815	0900	N14	E40		07	15.36	51D	1N		P		241	3.3	BFT
ISTA	12	0816		0825	N14	E38		07	15.22	9	SN						E
YUNN	12	0908	0935	0937D	N12	E40		07	15.40	29D	3B				1125	15.1	FUT
ISTA	12	0910		0913	N10	E06		07	12.83	3	SF						E
ISTA	12	0910		1215	N12	E39		07	15.32	185	3B						F
YUNN	12	1018E	1020U	1020D	N10	E36		07	15.14	2D	3B		P	1020	1527	19.5	BFT
WEND	12	1022E	1054	1235D	N12	E37		07	15.22	133D	3B		C	1054	1450	19.0	
RAMY	12	1125E	1226U	1347	N10	E30		07	14.73	142D	2B	3	C		766		FE 3804
HOLL	12	1300E	1300U	1328	N13	E42		07	15.71	28D	1N	3	C		215		F K 3804
HOLL	12	1440	1441	1451	S23	E14		07	13.69	11	SF	3	C		21		3806
RAMY	12	1441	1443	1455	S23	E15		07	13.77	14	SF	3	C		24		FE 3806
HOLL	12	1548	1549	1609	N16	W44		07	9.32	21	SF	3	C		27		3808
RAMY	12	1550	1551	1607	N14	W44		07	9.33	17	SN	3	C		24		3808
HOLL	12	1550	1551	1556	N12	E33		07	15.15	6	SN	3	C		25		F 3804
HOLL	12	1605	1605	1612	S25	E14		07	13.76	7	SF	3	C		23		3806
HOLL	12	1629	1630	1645	N14	E34		07	15.26	16	SB	3	C		68		F 3804
RAMY	12	1630	1631	1653	N10	E33		07	15.17	23	SB	3	C		65		F 3804

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	Sec	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	12	1710	1716	1757	S24	E14		07	13.80	47	SN	3	C		35		F K 3806
HOLL	12	1710	1742	1757	S24	E14		07	13.80	47	SF	3	C		38		K 3806
HOLL	12	1803	1803	1812	S25	E13		07	13.76	9	SF	3	C		20		3806
HOLL	12	1809	1809	1822	N10	E33		07	15.24	13	SN	3	C		22		F 3804
RAMY	12	1811	1811	1832	N14	E36		07	15.48	21	SN	3	C		51		F 3804
HOLL	12	1907	1908	1916	N20	E38		07	15.71	9	SB	3	C		108		F 3804
RAMY	12	1912	1912	1920D	N15	E32		07	15.22	8D	SN	3	C		132		3804
HOLL	12	1914	1914	1925	N13	E02		07	12.95	11	SF	3	C		30		3803
HOLL	12	1951	2013	2030	S10	E43		07	16.06	39	SF	3	C		32		3807
PALE	12	2003	2018	2044	S08	E43		07	16.06	41	SN	3	C		20		3807
PALE	12	2006	2106	2127D	N13	E01		07	12.91	81D	SB	3	C		181		3803
HOLL	12	2007	2007	2015	N18	E33		07	15.35	8	SN	3	C		19		3804
HOLL	12	2023	2030	2100	S24	E11		07	13.70	37	SB	3	C		100		F 3806
PALE	12	2024	2030	2053	S24	E11		07	13.70	29	SB	3	C		84		FE 3806
HOLL	12	2025	2106	2209	N13	E02		07	13.00	104	SN	3	C		129		F 3803
HOLL	12	2035	2042	2154	N10	E31		07	15.19	79	1B	3	C		241		UEK 3804
HOLL	12	2035	2054	2154	N10	E31		07	15.19	79	2B	3	C		570		K 3804
PALE	12	2036	2054	2119	N10	E29		07	15.04	43	1B	3	C		393		FE 3804
HOLL	12	2041	2045	2052	N17	W49		07	9.14	11	SN	3	C		58		F 3808
HOLL	12	2056	2056	2104	N15	W51		07	9.01	8	SF	3	C		29		3808
PALE	12	2057	2058	2112	N15	W48		07	9.24	15	SF	3	C		29		3808
HOLL	12	2132	2135	2153	S23	E13		07	13.90	21	SN	3	C		81		F 3806
HOLL	12	2240	2242	2244	N18	W50		07	9.13	4	SF	3	C		23		H 3808
HOLL	12	2313	2346	0011	N09	E27		07	15.00	58	SN	3	C		101		F 3804
PALE	12	2340	2346	0010	N11	E28		07	15.09	30	SB	3	C		75		FE 3804
LEAR	12	2347E	2347U	0010	N11	E28		07	15.10	23D	SB	2	C		60		FE 3804
HOLL	13	0015	0015	0028	N13	W01		07	12.93	13	SF	3	C		23		3803
HOLL	13	0025	0028	0051	S26	E09		07	13.72	26	SF	3	C		32		3806
PALE	13	0027	0032	0039	N10	E24		07	14.82	12	SN	3	C		46		F 3804
HOLL	13	0027	0036	0057	N09	E26		07	14.97	30	SN	3	C		75		F 3804
HOLL	13	0028	0057	0108	N19	E70		07	18.37	40	SN	3	C		50		3812
PALE	13	0043	0058	0115	N21	E70		07	18.40	32	SN	3	C		82		3812
YUNN	13	0058E	0058U	0103	N18	E78		07	18.98	5D	SN		P	0058	32		D
LEAR	13	0213	0215	0227	S24	E10		07	13.87	14	SN	3	C		30		F 3806
PALE	13	0216	0220	0236	S25	E09		07	13.79	20	SF	3	C		50		3806
PALE	13	0218	0222	0226	N10	E25		07	14.98	8	SN	3	C		54		3804
LEAR	13	0219	0221	0230	N09	E23		07	14.82	11	SN	3	C		50		F 3804
LEAR	13	0222	0225	0231	S12	E45		07	16.49	9	SF	3	C		35		F 3809
PEKG	13	0225	0230	0250	N24	E42		07	16.35	25	1N		C	0230	151	2.2	EK
PEKG	13	0225	0235	0250	N24	E41		07	16.27	25	SN		C	0235	139	2.0	E
PALE	13	0225	0225	0231	S10	E45		07	16.48	6	SF	3	C		27		3809
LEAR	13	0228	0231	0242	N21	E37		07	15.94	14	SN	3	C		138		F 3804
PEKG	13	0230	0244	0335	N08	E22		07	14.75	65	SN		C	0244	84	.9	D
YUNN	13	0230E	0235	0250	N23	E43		07	16.42	20D	SN		P		64	.9	DG
PALE	13	0230	0233	0258	N25	E42		07	16.36	28	SN	3	C		55		F 3804
PALE	13	0247	0252	0302	N13	W02		07	12.96	15	SF	3	C		31		3803
PEKG	13	0251	0300	0300D	N10	E24		07	14.92	9D	SN		C	0300	76	.8	E
PURP	13	0453	0455	0549	N08	E22		07	14.85	56	SN		C	0455	57	.6	
PURP	13	0527	0533	0549	S24	E09		07	13.92	22	SN		P	0533	92	1.1	
LEAR	13	0532	0533	0542	S24	E09		07	13.93	10	SN	3	C		30		F 3806
YUNN	13	0550E	0553	0618	N09	E23		07	14.97	28D	SF		P		64	.7	ET
YUNN	13	0618	0632	0658	S24	E06		07	13.73	40	SB		C		96	1.1	F
PEKG	13	0620	0630	0655	S25	E06		07	13.73	35	1N		C	0630	210	2.5	F
WEND	13	0623	0633	0648	S24	E08		07	13.88	25	SN		C	0633	144	1.6	
LEAR	13	0624	0637	0820	S25	E08		07	13.89	116	SB	3	C		177		FEK 3806
LEAR	13	0624	0722	0820	S25	E08		07	13.89	116	SB	3	C		166		K 3806
ISTA	13	0627		0653	S24	E08		07	13.89	26	1B						E
MANI	13	0627E	0638U	0652D	S24	E08		07	13.89	25D	SN	1	V		150	1.8	FE
PEKG	13	0637	0646	0654	N09	E22		07	14.93	17	SN		C	0646	155	1.8	F
ISTA	13	0645		0650	N10	E24		07	15.09	5	SN						E
YUNN	13	0646E	0646U	0658D	N09	E23		07	15.01	12D	SN		P	0646	64	.7	ET
LEAR	13	0646	0646	0659	N09	E22		07	14.93	13	SN	3	C		60		F 3804
PEKG	13	0647	0650	0655	N21	E32		07	15.74	8	SN		C	0650	126	1.6	D
LEAR	13	0648	0656	0728	S10	E40		07	16.29	40	SB	3	C		168		FE 3809
MANI	13	0648	0654	0711	S10	E39		07	16.22	23	SN	1	V		110	1.5	FE
ISTA	13	0649		0700	S12	E42		07	16.45	11	1B						E
PEKG	13	0649	0650	0700	S11	E42		07	16.45	11	SF		C	0650	126	1.8	E
YUNN	13	0651	0655	0658D	S11	E42		07	16.45	7D	SN		P		80	1.2	E
ISTA	13	0725		0743	S25	E08		07	13.93	18	1N						E
YUNN	13	0725E	0730	0744D	S26	E05		07	13.78	19D	SN		P		80	1.0	E

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
LEAR	13	0823	0825	0844	S23	E05		07	13.73	21	SB	3	C		106		FE	3806
MANI	13	0825E	0825	0840D	S23	E06		07	13.81	15D	SN	1	V		105	1.2	FE	
LEAR	13	0834	0835	0840	N19	E62		07	18.09	6	SN	3	C		19		H	3812
LEAR	13	0911	0913	0918D	N19	E62		07	18.12	7D	SN	3	C		30			3812
YUNN	13	0920E	0920U	0932	N18	E66		07	18.42	12D	SN		P	0920	48		D	
YUNN	13	0955E	0957U	0957D	N10	E24		07	15.22	2D	SN		P	0957	80	.9	FT	
WEND	13	1108	1110	1112D	S05	E32		07	15.86	4D	SF		C	1110	38	.5		
WEND	13	1118E		1137	S24	E09		07	14.17	19D	SN		C	1118	56	.6		
WEND	13	1400	1413	1452	N10	E18		07	14.94	52	1N		C	1413	289	3.2		
WEND	13	1410E	1427	1518	S24	E04		07	13.90	68D	1N		C	1427	238	2.7		
WEND	13	1411	1413	1417	N20	E64		07	18.49	6	SF		C	1413	44			
WEND	13	1625	1629	1646	S24	E01		07	13.76	21	SN		C	1629	175	2.0		
RAMY	13	1730E	1744	1748	N14	E58		07	18.12	18D	SF	3	C		132		F	3810
RAMY	13	1822	1823	1847	S25	E02		07	13.92	25	SN	3	C		89			3806
RAMY	13	1846	1848	1850	N10	E17		07	15.06	4	SN	3	C		21			3804
HOLL	13	2006	2038	2108	N19	E61		07	18.50	62	SN	3	C		70			3812
HOLL	13	2013	2018	2021	N10	E71		07	19.18	8	SF	2	C					3810
HOLL	13	2048	2051U	2059	S24	W01		07	13.79	11	SF	3	C		30			3806
HOLL	13	2149E	2152U	2249	S23	E02		07	14.06	60D	1B	3	C		291		ZF	3806
HOLL	13	2236	2237	2242	N12	W14		07	12.89	6	SF	3	C		37			3803
HOLL	13	2325	2325	2331	S24	E01		07	14.05	6	SF	3	C		34			3806
HOLL	14	0003	0004	0034D	S24	W01		07	13.92	31D	SN	3	C		110		F	3866
HOLL	14	0005E	0012	0034	N10	E14		07	15.06	29D	SB	3	C		121		FE	3804
LEAR	14	0012	0012	0028	N10	E14		07	15.06	16	SN	3	C		54		F	3804
LEAR	14	0115	0117	0129	S24	W02		07	13.90	14	SF	3	C		29			3806
LEAR	14	0120	0122	0140	N11	E51		07	17.90	20	SF	3	C		29		F	3810
LEAR	14	0122	0124	0133	N10	E13		07	15.03	11	SN	3	C		32			3804
LEAR	14	0330	0350	0427	S24	W02		07	13.99	57	SN	3	C		105		F K	3806
LEAR	14	0330	0418	0427	S24	W02		07	13.99	57	SN	3	C		17		K	3806
LEAR	14	0340	0342	0356	N18	E18		07	15.52	16	SN	3	C		21		F	3804
YUNN	14	0515E	0515U	0520	S09	E21		07	15.80	5D	SN		P	0515	32	.4	D	
LEAR	14	0537	0538	0545	N14	E13		07	15.22	8	SN	3	C		24			3804
LEAR	14	0541	0541	0626	N14	W68		07	9.09	45	SF	3	C		11			3808
LEAR	14	0609	0613	0625	S10	E26		07	16.21	16	SF	3	C		49		F	3809
LEAR	14	0632	0636	0714	N20	E57		07	18.64	42	SN	3	C		91		F	3812
WEND	14	0635	0643	0700	N21	E59		07	18.80	25	SF		C	0643	28	.6		
LEAR	14	0642	0646	0716	S24	W03		07	14.05	34	SN	3	C		65		F	3806
WEND	14	0643	0648	0700	S25	W01		07	14.20	17	SF		C	0648	66	.7		
YUNN	14	0650	0655	0705	S24	W05		07	13.90	15	SN		C		48	.6	E	
LEAR	14	0650	0651	0655	S09	E21		07	15.86	5	SF	3	C		26		F	3809
PEKG	14	0658E	0658E	0706	N20	E56		07	18.58	8D	SF		P	0658	63	1.2	E	
PEKG	14	0659E	0700	0710	S25	W04		07	13.98	11D	SF		P	0700	92	1.1	E	
PEKG	14	0745	0750	0803	N11	E03		07	14.55	18	SF		C	0750	76	.8	D	
YUNN	14	0802	0806	0818	N15	E14		07	15.40	16	SN		C		32	.3	DT	
LEAR	14	0818	0818	0824	N09	E08		07	14.95	6	SN	3	C		35		F	3804
LEAR	14	0837	0838	0843	N09	E07		07	14.88	6	SN	3	C		37		F	3804
YUNN	14	0854	0858	0902	N10	E07		07	14.90	8	SN		C		64	.7	DT	
LEAR	14	0855	0857	0901	N10	E08		07	14.97	6	SF	3	C		53			3804
YUNN	14	0952	0955	1005	N16	E21		07	16.01	13	SN		C		64	.7	T	
YUNN	14	1010	1016	1035	N10	E08		07	15.03	25	SN		C		80	.8	ET	
WEND	14	1024E	1026	1030D	N10	E08		07	15.03	6D	SN		C	1026	81	.9	E	
YUNN	14	1030	1037	1103	N19	E55		07	18.64	33	1B		C		129	2.3	F	
YUNN	14	1045	1050	1057	N14	E10		07	15.20	12	SN		C		32	.3	DT	
WEND	14	1052E		1112	N18	E57		07	18.80	20D	1N		C	1055	125	2.5		
WEND	14	1232	1246	1256	N10	E07		07	15.05	24	SN		C	1246	112	1.2		
WEND	14	1254	1258	1307	N10	E48		07	18.15	13	SN		C	1258	84	1.3		
HOLL	14	1300E	1301U	1311	N10	E46		07	18.00	11D	SF	3	C		56		F	3810
HOLL	14	1301E	1302U	1311	N11	E06		07	14.99	10D	SF	3	C		40		F	3804
HOLL	14	1313E	1333	1759	N21	E21		07	16.16	286D	SN	3	C		155		K	3804
HOLL	14	1313E	1511U	1759	N21	E21		07	16.16	286D	2B	3	C		892		ZUK	3804
WEND	14	1317	1326	1345D	N10	E07		07	15.08	28D	SN		C	1326	120	1.3		
HOLL	14	1329	1329	1341	N10	W25		07	12.68	12	SF	3	C		43			3803
HOLL	14	1333	1347	1355	S11	E27		07	16.60	22	SF	3	C		26			3809
RAMY	14	1335	1516	1831	N16	E15		07	15.70	296	1B	3	C		437		K	3804
RAMY	14	1335	1724	1831	N16	E15		07	15.70	296	SB	3	C		164		K	3804
HOLL	14	1406	1406	1412	S12	E26		07	16.55	6	SN	3	C		23			3809
HOLL	14	1418	1421	1425	S09	E16		07	15.80	7	SF	3	C		63			3807
HOLL	14	1418	1429	1545	S23	W09		07	13.90	87	SB	3	C		168		ZF	3806
WEND	14	1428	1432	1437D	S25	W06		07	14.14	9D	SN		C	1432	38	.4		
HOLL	14	1433	1441	1448D	N16	W73		07	9.07	15D	SF	3	C					3808

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
WEND	14	1534E		1738D	N21	E21		07	16.26	124D	2N		C	1534	640	7.5	IS
HOLL	14	1545	1545	1600	N19	E50		07	18.47	15	SN	3	C		45		K 3812
HOLL	14	1545	1555	1600	N19	E50		07	18.47	15	SF	3	C		24		K 3812
HOLL	14	1725	1747	1902	N18	E48		07	18.38	97	2B	3	C		823		U 3812
WEND	14	1730		1738D	N19	E50		07	18.55	8D	1N		C	1738	125	2.1	
HOLL	14	1827	1827	1850	S11	E24		07	16.58	23	SN	3	C		37		3809
RAMY	14	1834	1839	1840D	N14	E06		07	15.23	6D	SB	3	C		123		3804
HOLL	14	1837	1842	1918	N11	E05		07	15.15	41	SB	3	C		202		FE 3804
HOLL	14	1933	1933	1937	N17	E14		07	15.88	4	SB	3	C		42		3804
HOLL	14	2030	2031	2051	N11	E01		07	14.93	21	SN	3	C		34		F 3804
HOLL	14	2040	2058	2137	S23	W15		07	13.70	57	SF	3	C		46		F 3806
PALE	14	2045	2047	2051	N18	E13		07	15.86	6	SN	1	C		88		F 3804
HOLL	14	2059	2059	2107	N12	E40		07	17.89	8	SF	3	C		22		3810
HOLL	14	2119	2120	2138	N17	E14		07	15.95	19	SB	3	C		24		E 3804
HOLL	14	2123	2131	2139	S20	E45		07	18.34	16	SF	3	C		40		3815
PALE	14	2128E	2130U	2142	N17	E13		07	15.88	14D	SN	1	C		35		3804
HOLL	14	2212	2229	2232	N15	E07		07	15.46	20	SN	3	C		25		F 3804
PALE	14	2227	2229	2233	N17	E13		07	15.92	6	SN	1	C		38		F 3804
HOLL	14	2240	2240	2251	S09	E16		07	16.15	11	SF	3	C		26		F 3809
PALE	14	2341	2342	2350	N20	E42		07	18.20	9	SF	2	C		45		3812
LEAR	15	0015	0017	0033	S21	W58		07	10.56	18	SF	3	C		31		3802
PALE	15	0018	0018	0023	N09	E01		07	15.09	5	SN	2	C		76		F 3804
HOLL	15	0018	0019	0023	N09	E01		07	15.09	5	SN	3	C		55		F 3804
PEKG	15	0020E	0020	0048D	N10	E01		07	15.09	28D	SN		P	0020	134	1.4	E
YUNN	15	0055	0055	0105D	N14	E36		07	17.76	10D	SN		P		32	.4	D
PALE	15	0056	0056	0111	N15	E06		07	15.49	15	SN	2	C		25		3804
PALE	15	0058	0102	0110	S19	W62		07	10.31	12	SF	2	C		62		3802
LEAR	15	0113	0128	0138	S20	W65		07	10.08	25	SF	3	C		44		3802
LEAR	15	0120	0203	0225	N19	E43		07	18.34	65	SN	3	C		37		F 3812
LEAR	15	0145	0205	0237	N14	E39		07	18.02	52	SF	3	C		144		F 3810
PALE	15	0145	0158	0235	N10	E33		07	17.55	50	SN	2	C		173		3810
YUNN	15	0149	0201	0225	N14	E38		07	17.35	36	SN		C		80	1.1	E
PEKG	15	0155E	0205	0235	N14	E39		07	18.03	40D	SN		C	0205	147	2.0	F
PALE	15	0205	0208	0218	N21	E45		07	18.54	13	SN	3	C		23		3812
PEKG	15	0210	0226	0452	N13	E01		07	15.17	162	1B		C	0226	442	4.6	FI
PALE	15	0212	0213	0353D	N18	E10		07	15.85	101D	SN	1	C		34		K 3804
PALE	15	0212	0339	0353D	N18	E10		07	15.85	101D	2B	1	C		724		FEK 3804
LEAR	15	0219	0232	0538	N11	W00		07	15.10	199	1B	3	C		369		K 3804
LEAR	15	0219	0338	0538	N11	W00		07	15.10	199	2B	3	C		665		ZUK 3804
YUNN	15	0220	0225	0320	N14	E03		07	15.32	60	SN		C		161	1.7	FT
PALE	15	0249	0251	0309	N15	E39		07	18.07	20	SN	2	C		34		3810
YUNN	15	0250	0258	0315	N13	E39		07	18.06	25	SN		C		32	.4	D
LEAR	15	0305	0324	0357	N20	E45		07	18.57	52	SB	3	C		75		FE 3812
YUNN	15	0320E	0320U	0335	N18	E46		07	18.64	15D	SN		P	0320	48	.7	F
PALE	15	0323	0324	0334	N20	E44		07	18.51	11	SN	1	C		55		F 3812
PEKG	15	0326E	0326	0345	N19	E43		07	18.43	19D	SN		C	0326	92	1.3	E
YUNN	15	0330	0340	0355	N16	E08		07	15.75	25	1B		C		257	2.7	F
PEKG	15	0335	0338	0345	N18	E10		07	15.91	10	1B		C	0338	357	3.8	E
PEKG	15	0358	0402	0440	N19	E45		07	18.60	42	1B		C	0402	273	4.1	F
LEAR	15	0401	0402	0510	N20	E45		07	18.61	69	1B	3	C		218		K 3812
LEAR	15	0401	0418	0510	N20	E45		07	18.61	69	1B	3	C		339		FEK 3812
YUNN	15	0408	0417	0445	N17	E44		07	18.52	37	SN		C		129	1.9	F
PEKG	15	0544E	0544	0550	N19	W04		07	14.93	6D	1N		P	0544	252	2.6	F
LEAR	15	0545	0547	0601D	N08	W03		07	15.01	16D	1N	3	C		260		F 3804
WEND	15	0613	0615	0624	N10	E38		07	18.12	11	SN		C	0615	43	.6	
WEND	15	0632	0632	0640	S25	W18		07	13.88	8	SF		C	0632	25	.3	E
WEND	15	0632	0636	0646	N21	E44		07	18.65	14	SF		C	0636	28	.4	
WEND	15	0710	0714	0718	N10	W03		07	15.07	8	SF		C	0714	31	.3	E
ISTA	15	0728		0742	N21	E08		07	15.92	14	SN						
WEND	15	0730	0735	0743	N17	E01		07	15.39	13	SN		C	0735	44	.5	
YUNN	15	0744	0756	0809	N17	E40		07	18.36	25	SN		C		80	1.1	D
WEND	15	0822	0824	0838	N18	E73		07	20.91	16	SF		C	0824	30		
YUNN	15	0950E	0950U	1000	N19	E40		07	18.46	10D	SN		P	0950	96	1.3	F
RAMY	15	1201	1238	1350	N20	E39		07	18.49	109	2B	3	C		647		3812
WEND	15	1237E		1257	N20	E40		07	18.59	20D	SN		C	1238	106	1.5	
RAMY	15	1316	1318	1349	N17	W01		07	15.48	33	SN	3	C		30		3804
RAMY	15	1442	1445	1501	N10	W14		07	14.56	19	SN	3	C		42		3804
HOLL	15	1526	1528	1553	N11	E24		07	17.45	27	SB	3	C		97		FE 3810
RAMY	15	1602	1604	1616	S25	W23		07	13.89	14	SN	3	C		40		3806
RAMY	15	1603	1631	1648	N11	W15		07	14.54	45	SB	3	C		89		FE 3804

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HOLL	15	1625E	1629	1640	N11	W15		07	14.55	15D	SN	3	C		27		F	3804
HOLL	15	1720	1744	1747	N10	W14		07	14.67	27	SF	3	C		77		F	3804
HOLL	15	1731	1739	1741D	N19	E37		07	18.56	10D	SB	3	C		136		FE	3812
RAMY	15	1737	1740	1811D	N21	E37		07	18.57	34D	SB	3	C		135		FE	3812
HOLL	15	1959E	2004	2057D	N12	W15		07	14.70	58D	SN	3	C		151		K	3804
HOLL	15	1959E	2057	2057D	N12	W15		07	14.70	58D	SB	3	C		102		K	3804
HOLL	15	2027	2030	2051	N17	E68		07	21.02	24	SN	3	C		95		F	3817
HOLL	15	2137	2139	2203	S12	E08		07	16.50	26	SF	3	C		63			3809
HOLL	15	2219	2220	2231	S22	E45		07	19.39	12	SN	3	C		20			
PEKG	16	0020E	0023	0124	N11	W18		07	14.66	64D	1N		C	0023	202	2.2	FJK	
PEKG	16	0020E	0035	0124	N11	W16		07	14.81	64D	1N		C	0035	378	4.1	F	
YUNN	16	0025E	0025U	0030D	N11	W19		07	14.59	5D	SN		P	0025	80	.9	E	
YUNN	16	0106E	0125U	0151D	N11	W16		07	14.84	45D	SN		P	0125	129	1.4	F	
PALE	16	0114E	0143	0200	N10	W17		07	14.77	46D	1N	2	C		224		FE	3804
PALE	16	0133	0142	0149	S25	W25		07	14.13	16	SF	2	C		49		F	3806
YUNN	16	0220	0221	0230	S24	W32		07	13.62	10	SN		C		64	.9	F	
PEKG	16	0318	0326	0334	N21	W05		07	15.75	16	SB		C	0326	147	1.6	F	
PEKG	16	0322	0326	0330	S08	W06		07	15.69	8	SF		C	0326	29	.3	D	
YUNN	16	0325	0327	0338	N22	W05		07	15.76	13	SN		C		129	1.4	F	
PEKG	16	0425	0430	0450	N23	E33		07	18.73	25	SF		C	0430	50	.6	D	
PEKG	16	0520E	0520	0522	N12	W16		07	15.02	2D	SN		P	0520	63	.7	E	
PEKG	16	0522	0526	0528	N22	W06		07	15.76	6	SN		C	0526	34	.4	D	
PEKG	16	0545	0550	0550D	N19	E26		07	18.23	5D	SF		P	0550	34	.4	D	
PEKG	16	0547	0550	0557	N17	W12		07	15.33	10	SN		C	0550	80	.9	E	
WEND	16	0655	0658	0717	S28	W32		07	13.79	22	SN		C	0658	25	.3		
PEKG	16	0733E	0733	0739	N13	W17		07	15.03	6D	SN		P	0733	55	.6	D	
WEND	16	0733	0734	0737	N12	W17		07	15.03	4	SF		C	0734	20	.2		
YUNN	16	0802	0810	0830	N14	W13		07	15.35	28	SN		C		48	.5	E	
YUNN	16	0804	0813	0844	N12	E24		07	18.15	40	SN		C		64	.7		
WEND	16	0807	0810	0818	N11	E24		07	18.15	11	SF		C	0810	64	.7		
WEND	16	0808E	0810	0816	N17	E63		07	21.13	8D	SF		C	0810	25	.6		
WEND	16	0900	0903	0921	N11	W15		07	15.25	21	SN		C	0903	60	.7		
WEND	16	0902	0908	0923D	N19	W09		07	15.69	21D	SF		C	0908	58	.6	E	
YUNN	16	0903E	0903U	0941	N13	W17		07	15.09	38D	SN		P	0903	64	.7		
PEKG	16	1020	1028	1040D	N11	W19		07	15.00	20D	1F		P	1028	210	2.3	F	
PEKG	16	1028E	1028	1028D	N11	E23		07	18.17	20D	SN		P	1028	25	.3	D	
RAMY	16	1129E	1220	1308	N07	E19		07	17.90	99D	SF	3	C		61			3810
RAMY	16	1216	1217	1223	N12	W20		07	15.00	7	SB	3	C		45			3804
RAMY	16	1249	1258	1350	N20	E25		07	18.45	61	SN	3	C		130			3812
HOLL	16	1249E	1252	1305	N12	W18		07	15.18	16D	SB	2	C		174		FE	3804
HOLL	16	1249E	1252	1313	N21	E26		07	18.53	24D	SF	2	C		59			3812
HOLL	16	1256	1257	1300	N16	E59		07	21.02	4	SF	2	C		34			3817
HOLL	16	1316	1318	1330	N12	W19		07	15.12	14	SF	2	C		54		F	3804
HOLL	16	1316	1358	1420	N19	E21		07	18.16	64	SF	3	C		84		F	3812
HOLL	16	1338	1343	1352	N12	W53		07	12.57	14	SF	3	C		25		F	3803
HOLL	16	1341	1352	1417	S24	W38		07	13.63	36	SN	3	C		48		F	3806
HOLL	16	1348	1355	1436	N10	E20		07	18.08	48	SB	3	C		168		FE	3810
RAMY	16	1352	1355	1355D	N11	E19		07	18.01	3D	SB	3	C		97		FE	3810
HOLL	16	1426	1458	1559	S22	W36		07	13.83	93	1B	3	C		339		FE	3806
WEND	16	1458	1509	1534	S25	W35		07	13.91	36	1N		C	1509	156	2.2		
HOLL	16	1516	1523	1555	N13	W22		07	14.97	39	SB	3	C		171		E	3804
WEND	16	1520	1524	1532	N12	W20		07	15.13	12	SN		C	1524	50	.6		
HOLL	16	1531	1531	1557	N24	W05		07	16.26	26	SF	3	C		31			3814
HOLL	16	1616	1627	1717	N14	E18		07	18.04	61	1N	3	C		368		UF	3810
WEND	16	1617	1619	1623	N14	W19		07	15.24	6	SN		C	1619	25	.3	D	
HOLL	16	1617	1618	1720	N16	W18		07	15.31	63	SB	3	C		105		E	3804
WEND	16	1623	1627	1650	N15	E18		07	18.05	27	1N		C	1627	194	2.2		
WEND	16	1638	1639	1645	N17	E59		07	21.18	7	SN		C	1639	25	.5	H	
HOLL	16	1638	1640	1644	N16	E71		07	22.08	6	SN	3	C		61		F	3817
HOLL	16	1810E	1812	1825	N12	W23		07	15.02	15D	SN	3	C		37			3804
HOLL	16	1829	1844	2010	N21	E25		07	18.69	101	1B	3	C		226		UE	3812
PALE	16	1846	1847	2006	N20	E19		07	18.24	80	SB	3	C		185			3812
HOLL	16	1846	1847	1853	S21	E35		07	19.47	7	SN	3	C		34		F	
HOLL	16	1852	1855	1929	N17	W19		07	15.34	37	SB	3	C		84		E	3804
PALE	16	1857	1857	1916	N13	W23		07	15.05	19	SN	3	C		50			3804
HOLL	16	2034	2035	2040	N12	E19		07	18.29	6	SN	3	C		33			3810
HOLL	16	2131	2133	2142	S24	W42		07	13.65	11	SN	3	C		61			3806
HOLL	16	2132	2133	2141	N13	E15		07	18.03	9	SF	3	C		34			3810
HOLL	16	2149	2150	2157	S07	W15		07	15.78	8	SF	3	C		32			3807
PEKG	16	2343	2350	2400	N15	E15		07	18.12	17	1B		C	2350	231	2.5	F	

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PEKG	16	2351	2353	2400	N22	W17		07	15.69	9	1B		C	2353	189	2.1	F	
PALE	16	2352	2355	2355D	N13	W25		07	15.11	3D	SB	3	C		99			3804
PEKG	17	0001	0005	0036	N18	W20		07	15.48	35	1B		C	0005	357	4.0	F	
YUNN	17	0010E	0014	0030	N17	W20		07	15.49	20D	SN		P		113	1.3	E	
LEAR	17	0057	0059	0114	N14	E14		07	18.10	17	SN	3	C		56		F	3810
PEKG	17	0136	0137	0145	N10	W34		07	14.51	9	SN		C	0137	46	.6	E	
LEAR	17	0143	0143	0153	S22	W43		07	13.76	10	SN	3	C		36			3806
PEKG	17	0150	0152	0200	N13	E14		07	18.13	10	SN		C	0152	126	1.4	E	
PEKG	17	0203E	0206	0315	N11	W34		07	14.53	72D	1B		C	0206	302	3.7	F	
YUNN	17	0203	0210	0245	N12	W33		07	14.60	42	1B		C		370	4.6	F	
LEAR	17	0203	0206	0322	N11	W34		07	14.53	79	1B	3	C		273		UF	3804
MANI	17	0205E	0207U	0210D	N14	W23		07	15.35	5D	1B	1	V		300	3.4	FZ	
LEAR	17	0217	0230	0236	S25	W47		07	13.45	19	SN	3	C		57			3806
PEKG	17	0234	0236	0243	N19	W22		07	15.43	9	SN		C	0236	134	1.5	E	
YUNN	17	0236E	0236	0251	N24	W19		07	15.64	15D	SN		P		48	.6		
LEAR	17	0326	0333	0340	S24	W46		07	13.59	14	SF	3	C		29			3806
LEAR	17	0349	0351	0417	N09	W34		07	14.61	28	SN	3	C		27			3804
LEAR	17	0417	0418	0424	S11	W09		07	16.50	7	SN	3	C		31		F	3809
LEAR	17	0444	0444	0452	S25	W48		07	13.48	8	SN	3	C		19			3806
LEAR	17	0518	0520	0528	N14	E12		07	18.13	10	SF	3	C		46		F	3810
LEAR	17	0523	0525	0550	S11	W09		07	16.55	27	SN	3	C		41		F	3809
LEAR	17	0536	0539	0549	N17	W24		07	15.41	13	SN	3	C		50		F	3804
YUNN	17	0538	0543	0548	N26	W19		07	15.76	10	SF		C		48	.6		
YUNN	17	0538	0543	0548	S22	W49		07	13.47	10	SN		C		32	.6		
LEAR	17	0602	0602	0616	N17	E17		07	18.54	14	SN	3	C		28			3812
LEAR	17	0612	0620	0635	N12	E11		07	18.09	23	SN	3	C		63			3810
LEAR	17	0613	0618	0632	S21	E28		07	19.41	19	SF	3	C		39			3819
YUNN	17	0614	0624	0705	N12	W20		07	15.75	51	SN		C		113	1.2	F	
PEKG	17	0618	0625	0637	N11	W20		07	15.76	19	SN		C	0625	92	1.0	F	
LEAR	17	0620	0625	0636	N12	W61		07	12.66	16	SN	3	C		38			3803
PEKG	17	0622	0625	0628	N18	W25		07	15.36	6	SF		C	0625	38	.4	E	
PEKG	17	0623	0625	0627	N14	W62		07	12.58	4	SN		C	0625	29	.6	D	
PEKG	17	0625E	0625	0628	N13	E11		07	18.10	3D	SF		P	0625	29	.3	E	
PEKG	17	0651	0656	0716	N11	W20		07	15.78	25	SN		C	0656	92	1.0	E	
YUNN	17	0705	0708	0718	S23	W48		07	13.59	13	SN		C		32	.6	E	
YUNN	17	0710	0714	0727	N13	W36		07	14.58	17	SN		C		32	.4	E	
PEKG	17	0714E	0714	0718	N13	W37		07	14.51	4D	SN		C	0714	55	.7	E	
PEKG	17	0714E	0714	0720	S24	W48		07	13.59	6D	SF		P	0714	50	.9	E	
YUNN	17	0724E	0724U	0724D	N14	W28		07	15.19	6D	SN		P	0724	80	.9		
PEKG	17	0802	0806	0813	N10	W35		07	14.70	11	SF		P	0806	42	.5	D	
LEAR	17	0915	0916	0921D	S25	W48		07	13.67	6D	SN	3	C		23			3806
RAMY	17	1218E	1224	1329	N18	E47		07	21.09	71D	SB	3	C		105			3817
RAMY	17	1233	1259	1346	N21	W26		07	15.53	73	1B	3	C		215		FE	3804
HOLL	17	1255E	1259	1335	N20	W22		07	15.85	40D	SB	3	C		108		FE	3804
RAMY	17	1311	1312	1327	N22	E11		07	18.40	16	SN	3	C		41			3812
HOLL	17	1311	1315	1327	N21	E12		07	18.47	16	SN	3	C		81		F	3812
RAMY	17	1341	1350	1443D	S25	W50		07	13.70	62D	SB	3	C		95		FE	3806
HOLL	17	1345	1350	1435	S23	W51		07	13.64	50	SB	3	C		88		F	3806
HOLL	17	1405	1411	1415	N12	W65		07	12.69	10	SF	3	C		16			3803
RAMY	17	1510	1512	1520	N15	E12		07	18.54	10	SN	3	C		36			3810
HOLL	17	1511	1512	1521	N14	E13		07	18.62	10	SN	3	C		39		F	3810
HOLL	17	1512	1524	1553	N16	E46		07	21.12	41	1N	3	C		164		F	3817
RAMY	17	1513	1523	1549	N17	E45		07	21.06	36	SB	3	C		135			3817
RAMY	17	1538	1538	1544	N16	E12		07	18.56	6	SN	3	C		51			3810
HOLL	17	1551	1553	1601	N14	E05		07	18.04	10	SF	3	C		23			3810
HOLL	17	1617	1625	1635	N12	W40		07	14.66	18	SF	3	C		36			3804
HOLL	17	1713	1717	1740	N14	W37		07	14.92	27	SB	3	C		146		F	3804
RAMY	17	1714	1715	1722	N15	E03		07	17.95	8	SF	3	C		40			3810
RAMY	17	1714	1718	1729	N12	W38		07	14.85	15	SB	3	C		125			3804
RAMY	17	1742	1745	1801	N12	E07		07	18.27	19	SF	3	C		34			3810
RAMY	17	1754	1800	1817	N10	W41		07	14.66	23	SB	3	C		61			3804
RAMY	17	1801	1807	1808	N11	E10		07	18.50	7	SF	3	C		30			3810
RAMY	17	1804	1805	1826	S25	W55		07	13.49	22	SF	3	C		21			3806
PALE	17	1825E	1832	1851	N20	E06		07	18.23	26D	SB	3	C		134			3812
HOLL	17	1825	1829	1858	N22	E13		07	18.77	33	SB	3	C		170		FE	3812
RAMY	17	1826	1827	1836D	N23	E12		07	18.69	10D	SB	3	C		77		FE	3812
HOLL	17	2124	2124	2131	N20	W30		07	15.60	7	SF	3	C		22			3804
HOLL	17	2147	2148	2152	N11	W46		07	14.44	5	SF	3	C		24			3804
PALE	17	2210	0046	0048D	N15	W03		07	17.70	158D	SB	3	C		125			3812
HOLL	17	2225	2228	2245	N15	E02		07	18.09	20	SF	3	C		44			3810

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
HOLL	17	2310	2316	2357	N18	W35		07	15.30	47	2B	3	C		1057		UE 3804
MANI	17	2311	2315	2334D	N17	W35		07	15.30	23D	2B	1	V		600	7.7	FE
PALE	17	2323	2323	2348	N13	W38		07	15.10	25	1B	3	C		275		FE 3804
LEAR	18	0019	0019	0022	S24	W57		07	13.61	3	SF	2	C		21		3806
PEKG	18	0021	0030	0045	N16	E46		07	21.51	24	SF		C	0030	21	.3	D
PEKG	18	0021	0030	0048	N12	W44		07	14.70	27	1F		C	0030	160	2.3	F
PEKG	18	0021	0030	0150	N15	W01		07	17.94	89	SF		C	0030	134	1.4	F
LEAR	18	0022	0023	0041	N10	W44		07	14.71	19	SF	2	C		35		F 3804
LEAR	18	0043	0046	0101	N14	W02		07	17.88	18	SN	3	C		49		F 3810
LEAR	18	0045	0047	0156	N10	W47		07	14.50	71	SN	3	C		47		3804
LEAR	18	0051	0053	0127	N22	E08		07	18.65	36	SN	3	C		92		F 3812
PEKG	18	0130E	0155	0230	N12	W74		07	12.48	60D	SB		C	0155	88		E
LEAR	18	0143	0143	0237	N11	W72		07	12.65	54	SF	3	C		12		K 3803
LEAR	18	0143	0200	0237	N11	W72		07	12.65	54	SB	3	C		53		E K 3803
PEKG	18	0245E	0245	0247	N23	E09		07	18.81	2D	SN		C	0245	34	.4	E
LEAR	18	0322	0322	0331D	N15	W39		07	15.19	9D	SN	3	C		26		F 3804
PEKG	18	0619E	0620	0635	N12	W50		07	14.49	16D	SF		C	0620	118	1.9	E
PEKG	18	0619E	0621	0643	N22	E06		07	18.72	24D	SN		C	0621	147	1.6	E
PEKG	18	0635E	0635	0643	N23	W33		07	15.73	8D	SN		C	0635	109	1.4	E
PEKG	18	0740	0752	0825	N15	W06		07	17.86	45	1B		C	0752	273	2.9	F
PEKG	18	0750	0752	0801	N19	E03		07	18.56	11	SN		C	0752	46	.5	D
YUNN	18	0840	0845	0855	N11	W51		07	14.52	15	SN		C		96	1.6	E
YUNN	18	0916	0922	0930	N17	W41		07	15.27	14	SN		C		64	.9	E
RAMY	18	1134E	1134	1140	S24	W62		07	13.69	6D	SF	3	C		21		3806
RAMY	18	1135E	1135	1142	S10	W27		07	16.45	7D	SF	3	C		49		3809
RAMY	18	1135E	1144	1244	N11	W52		07	14.57	69D	1B	3	C		219		FE 3804
RAMY	18	1211	1212	1222	N22	E02		07	18.66	11	SF	3	C		23		3812
RAMY	18	1226	1227	1237	N10	W84		07	12.20	11	SF	3	C				3803
RAMY	18	1233	1236	1252	N15	W06		07	18.07	19	SN	3	C		42		3810
RAMY	18	1333	1333	1344	N19	W44		07	15.20	11	SN	3	C		25		3804
RAMY	18	1411	1414	1439	N13	W06		07	18.14	28	SN	3	C		43		3810
RAMY	18	1459	1501	1511	N18	W45		07	15.19	12	SF	3	C		19		3804
RAMY	18	1510	1521	1554	N17	E33		07	21.14	44	SN	3	C		87		3817
HOLL	18	1510	1519	1552	N16	E34		07	21.21	42	SN	3	C		87		3817
RAMY	18	1517	1521	1529	N18	W46		07	15.13	12	SB	3	C		141		FE 3804
HOLL	18	1517	1519	1526	N18	W43		07	15.36	9	SB	3	C		114		E 3804
HOLL	18	1528	1530	1534	S04	W40		07	15.65	6	SF	3	C		29		3807
HOLL	18	1528	1531	1534	N20	W02		07	18.49	6	SF	3	C		29		3812
RAMY	18	1607	1614	1633	S11	W30		07	16.41	26	SF	3	C		19		3809
HOLL	18	1617	1620	1625	S04	W41		07	15.61	8	SF	3	C		81		3807
HOLL	18	1619	1623	1625	N15	W10		07	17.92	6	SF	3	C		36		3810
RAMY	18	1620	1645	1703	N16	W13		07	17.69	43	SN	3	C		100		3810
HOLL	18	1623	1624	1627	N20	W04		07	18.38	4	SF	3	C		27		3812
HOLL	18	1626	1627	1655	N15	W11		07	17.85	29	SN	3	C		75		3810
HOLL	18	1641	1646	1714	N20	W04		07	18.39	33	SF	3	C		40		3812
HOLL	18	1657	1658	1704	N18	W43		07	15.43	7	SN	3	C		39		3804
HOLL	18	1836	1836	1839	N18	W47		07	15.19	3	SN	3	C		27		3804
HOLL	18	2028	2032	2037	N13	W12		07	17.95	9	SF	3	C		40		3810
HOLL	18	2040	2040	2046	N14	W10		07	18.10	6	SF	3	C		32		3810
HOLL	18	2052	2056	2102	N13	W85		07	12.45	10	SF	3	C				3803
PALE	18	2146	2146	2153	N19	W40		07	15.85	7	SN	3	C		62		3804
PALE	18	2157	2200	2215	N23	W03		07	18.68	18	SN	3	C		66		F 3812
HOLL	18	2203	2206	2212	N23	W02		07	18.76	9	SF	3	C		44		F 3812
HOLL	18	2204E	2218U	2225	N15	W12		07	18.01	21D	SF	3	C		64		F 3810
PALE	18	2207	2218	2234	N13	W16		07	17.71	27	SN	3	C		76		3810
HOLL	18	2311	0031	0047D	N14	W13		07	17.98	96D	1F	3	C		284		F 3610
HOLL	18	2332	2334	2342	N19	W48		07	15.31	10	SF	3	C		18		F 3804
HOLL	19	0012	0044U	0047D	N11	W53		07	15.02	35D	1N	3	C		218		F 3804
PALE	19	0014	0020	0023	N10	W56		07	14.80	9	SN	3	C		45		F 3804
PALE	19	0022	0023	0030	N15	W13		07	18.03	8	SF	3	C		28		3810
PALE	19	0031	0032	0041	N15	W13		07	18.04	10	SF	3	C		47		F 3810
PALE	19	0042	0101	0128	N20	W45		07	15.58	46	2B	3	C		805		FEK 3804
PALE	19	0042	0112	0128	N20	W45		07	15.58	46	2B	3	C		477		K 3804
PEKG	19	0052E	0052E	0102	N13	W57		07	14.73	10D	1N		P	0052	218	4.1	F
PEKG	19	0052E	0104	0125	N21	W45		07	15.58	33D	2B		C	0104	547	8.2	F
YUNN	19	0100E	0112	0122	N22	W45		07	15.58	22D	1B		P		321	4.8	
PALE	19	0156	0208	0234	N08	W55		07	14.95	38	SN	3	C		127		3804
PALE	19	0211	0218	0239	N15	W15		07	17.95	28	SN	3	C		116		K 3810
PALE	19	0211	0232	0239	N15	W15		07	17.95	28	SN	3	C		56		F K 3810

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks	
YUNN	19	0212	0217	0235	N10	W55		07	14.96	23	SN		C		80	1.4	E	
YUNN	19	0212	0229	0243	N16	W15		07	17.95	31	SN		C		48	.5	E	
PEKG	19	0215E	0217	0234	N15	W15		07	17.96	190	SN		C	0217	181	2.0	EU	
PALE	19	0240	0244	0254	N23	W06		07	18.65	14	SF	3	C		70			3812
PEKG	19	0242	0243	0245	N23	W05		07	18.73	3	SN		P	0243	105	1.2	E	
YUNN	19	0242	0244	0246	N24	W06		07	18.65	4	SN		C		48	.5	E	
PEKG	19	0325	0353	0404	N13	W54		07	15.06	39	1B		C	0353	214	3.8	F	
PALE	19	0353	0353	0403	N11	W55		07	15.02	10	SB	3	C		133		FE	3804
PEKG	19	0407E	0412	0455	N11	W61		07	14.58	480	1N		C	0412	168	3.4	FK	
PEKG	19	0407E	0422	0455	N11	W59		07	14.73	480	2B		C	0422	286	5.4	F	
YUNN	19	0425E	0441U	0448D	N14	W59		07	14.72	230	SN		P	0441	48	1.0		
YUNN	19	0440	0445	0448D	N25	W06		07	18.73	80	SN		P		32	.4		
PEKG	19	0542	0545U	0555D	N15	W17		07	17.95	130	2B		C	0545	589	6.4	F	
BUCA	19	0555E	0557	0715	N15	W15		07	18.11	800	2N		P	0557	829	8.9	E	
ISTA	19	0600E		0618	N14	W15		07	18.12	180	2N						BU	
YUNN	19	0911E	0912U	0923D	N12	W64		07	14.56	120	SN		P	0912	32	.7		
YUNN	19	0911E	0912U	0923D	N21	W09		07	18.69	120	SN		P	0912	96	1.0		
HOLL	19	1251E	1253U	1258	N12	W65		07	14.63	70	SF	3	C		80		F	3804
HOLL	19	1320	1325	1334	S10	W46		07	16.10	14	SF	3	C		29			3809
RAMY	19	1546	1606	1639	N15	W22		07	17.99	53	1B	3	C		218			3810
HOLL	19	1552	1611	1633	N21	W54		07	15.52	41	1B	3	C		150		FE	3804
HOLL	19	1557	1606	1632	N15	W21		07	18.07	35	SB	3	C		169		FE	3810
RAMY	19	1609	1611	1620	N20	W55		07	15.46	11	SB	3	C		66			3804
WEND	19	1612E		1624	N20	W53		07	15.62	120	SN		C	1612	81	1.5		
WEND	19	1620	1623	1625	N10	W75		07	14.04	5	SF		C	1623	32			
HOLL	19	1714	1803	1826	N15	W20		07	18.20	72	SF	3	C		119		F	3810
PALE	19	1800	1804	1814	N14	W23		07	18.01	14	SN	3	C		55			3810
HOLL	19	1807	1817	1947D	N11	W71		07	14.41	1000	1N	3	C		195		K	3804
HOLL	19	1807	1845	1947D	N11	W71		07	14.41	1000	SN	3	C		134		F K	3804
PALE	19	1810	1816	1837	N10	W66		07	14.79	27	SN	3	C		70		F	3804
PALE	19	1844	1849	1908	N10	W66		07	14.82	24	SN	3	C		71			3804
HOLL	19	1857	1905	1930	N24	W17		07	18.48	33	SN	3	C		84		F	3812
PALE	19	1859	1901	1911	N23	W17		07	18.48	12	SB	3	C		62		FE	3812
HOLL	19	1909	1911	1917	N16	E18		07	21.16	8	SF	3	C		23			3817
HOLL	19	1910	1913	1947	N14	W22		07	18.13	37	SN	3	C		48		F	3810
HOLL	19	1931	1935	1947	N16	E18		07	21.18	16	SB	3	C		99			3817
PALE	19	1935E	1935U	1948D	N17	E17		07	21.11	130	SB	3	C		50		E	3817
PALE	19	2146E	2153U	2204D	N15	W23		07	18.16	180	SN	3	C		109			3810
PALE	19	2220	2234U	2357	N10	W70		07	14.67	97	1N	3	C		247		F	3804
PALE	19	2304	2320U	2356	N14	W25		07	18.07	52	1B	3	C		238		FE	3810
MANI	19	2325E	2325U	2337D	N19	W60		07	15.39	120	SN	1	V		40	.8		
PALE	20	0038	0039	0057	N15	W27		07	17.98	19	SB	3	C		169		FE	3810
PALE	20	0118	0118	0125	N10	W66		07	15.09	7	SF	3	C		15			3804
PALE	20	0202	0204	0238	N17	E14		07	21.15	36	1B	3	C		246		H	3817
YUNN	20	0205E	0205U	0212	N16	E14		07	21.15	70	SN		P	0205	48	.5		
YUNN	20	0212	0215	0240	N20	W60		07	15.30	28	SN		C		64	1.3	E	
PALE	20	0215	0216	0230	N18	W59		07	15.60	15	SN	3	C		53		F	3804
MANI	20	0236E	0236U	0238D	N10	W69		07	14.92	20	SN	1	V		50	1.1	F	
PALE	20	0239	0242	0303	N11	W69		07	14.92	24	1N	3	C		150		F	3804
YUNN	20	0251E	0251U	0305D	N15	W69		07	14.89	140	SN		P	0251	32		E	
YUNN	20	0425E	0425U	0453	N22	W59		07	15.65	280	SN		P	0425	80	1.6		
YUNN	20	0602E	0605	0609	N11	W76		07	14.53	70	SN		P		16		D	
BUCA	20	0603E		0613	N11	W75		07	14.61	100	SF		C	0603	64			
PEKG	20	0605E	0605	0607	N11	W80		07	14.23	20	SF		P	0605	34		D	
BUCA	20	0605	0607	0615	N24	W23		07	18.48	10	SF		C	0607	107	1.2		
PEKG	20	0607	0609	0612	N24	W23		07	18.48	5	SN		C	0609	160	1.9	E	
YUNN	20	0609E	0609U	0609D	N24	W22		07	18.56	50	SB		P	0609	64	.8	D	
PEKG	20	0640	0642	0644	N20	W62		07	15.53	4	SF		C	0642	34	.7	D	
YUNN	20	0753	0757	0800D	N13	W76		07	14.59	70	1N		P		96		E	
WEND	20	0920	0921	0928	N13	W25		07	18.50	8	SF		C	0921	53	.6		
WEND	20	1159E		1218D	N12	W61		07	15.90	190	1N		C	1159	206	4.5		
RAMY	20	1206E	1206U	1404	N15	W59		07	16.03	1180	1N	3	C		148		FE	3804
HOLL	20	1246E	1306U	1357	N14	W63		07	15.77	710	1F	3	C		142		F	3804
HOLL	20	1252	1256	1332	N16	W33		07	18.03	40	1B	3	C		446		E	3810
RAMY	20	1253	1256	1315	N16	W34		07	17.96	22	1B	3	C		398			3810
HOLL	20	1438	1444	1445	S11	W56		07	16.39	7	SF	3	C		15			3809
RAMY	20	1525	1532	1549	N24	W28		07	18.48	24	SB	3	C		90		FE	3812
HOLL	20	1645	1647	1652	N17	E10		07	21.46	7	SF	3	C		47			3817
RAMY	20	1646	1647	1652	N17	E06		07	21.15	6	SN	3	C		39			3817
HOLL	20	1726	1726	1744	N16	W37		07	17.92	18	SN	3	C		40			3810

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JULY 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks	
HOLL	20	1748	1758	1802	N14	W69		07	15.52	14	SF	3	C		19			3804
HOLL	20	1802	1803	1812	N23	W63		07	15.89	10	SF	3	C		24			3804
HOLL	20	1807	1808	1829	N24	W28		07	18.59	22	SF	3	C		39		F	3812
HOLL	20	1846	1849	1859	N25	W29		07	18.53	13	SF	3	C		21			3812
MANI	20	2308E	2310	2338D	N21	W73		07	15.36	30D	1N	1	V		115	2.7		
YUNN	21	0257	0308	0320D	S19	E72		07	26.62	23D	SN		C		48			
YUNN	21	0532E	0536	0547	S19	E72		07	26.73	15D	SN		P		32			
WEND	21	0824	0828	0840	N15	W80		07	15.29	16	1N		C	0828	100		A	
WEND	21	0846	0849	0903	N36	W38		07	18.32	17	SF		C	0849	62	1.0		
WEND	21	0938	0943	0947D	N27	W44		07	17.97	9D	SF		C	0943	56	.9		
RAMY	21	1350	1350	1358	N19	W83		07	15.24	8	SF	3	C					3804
RAMY	21	1549	1549	1602	N19	W02		07	21.51	13	SF	3	C		23		K	3817
RAMY	21	1549	1556	1602	N19	W02		07	21.51	13	SF	3	C		27		K	3817
HOLL	21	1616E	1619U	1625D	N12	W48		07	18.06	9D	SF	2	C		100			3810
RAMY	21	1619	1620	1627	N15	W47		07	18.12	8	SN	3	C		75			3810
HOLL	21	1644	1648U	1650D	N15	W84		07	15.33	6D	SN	2	C					3804
RAMY	21	1704	1705	1716	N20	W84		07	15.28	12	SN	3	C					3804
RAMY	21	1715	1717	1742	N24	W42		07	18.47	27	SB	3	C		143		FE	3812
RAMY	21	1815	1824	1848	N23	W88		07	14.98	33	SN	3	C				F	3804
RAMY	21	1852	1852	1858	S17	E63		07	26.58	6	SF	3	C		20			
PEKG	22	0240E	0240E	0302	N21	W90		07	15.21	22D	SF		P	0245	42		AE	
PEKG	22	0511	0517	0530D	N22	W90		07	15.29	19D	1N		P	0517	139		AE	
BUCA	22	0725	0740	0755	N14	W58		07	17.92	30	SN		C	0740	107	2.0		
LEAR	22	0735	0736	0815	N16	W57		07	17.99	40	SB	3	C		120		E	3810
LEAR	22	0806	0806	0810	S08	W73		07	16.86	4	SF	3	C				F	3809
HOLL	22	1648	1707	1730	N16	W89		07	15.94	42	1F	3	C					3804
HOLL	22	1724	1727	1748	N20	W59		07	18.21	24	SF	3	C		32		F	3812
HOLL	22	1733	1733	1742	N29	W86		07	15.99	9	SF	3	C					3804
LEAR	22	2354	2357	0032	N21	W60		07	18.39	38	1F	2	C		169		F	3812
HOLL	22	2354	2358	0029	N22	W63		07	18.15	35	1N	3	C		175		F	3812
HOLL	23	0039	0042	0106D	N16	W67		07	17.94	27D	SN	3	C		78			3810
LEAR	23	0040	0045	0124	N15	W64		07	18.18	44	SF	2	C		96		F	3810
LEAR	23	0613	0617	0623	N23	W62		07	18.48	10	SN	3	C		23		F	3812
LEAR	23	0713	0714	0721	N21	W63		07	18.47	8	SN	3	C		24			3812
RAMY	23	1504	1505	1511	N24	W68		07	18.37	7	SN	3	C		50			3812
HOLL	23	1504	1505	1511	N25	W66		07	18.51	7	SN	3	C		58		F	3812
RAMY	24	1234E	1234U	1342	N20	W48		07	20.85	68D	SF	3	C		99			3817
HOLL	24	1321	1321	1338	S21	E27		07	26.63	17	SF	3	C		30		F	3822
RAMY	24	1455	1455	1507	N19	W51		07	20.73	12	SF	3	C		29			3817
RAMY	24	1615	1618	1627	S21	E26		07	26.67	12	SF	3	C		29			3822
HOLL	24	1651	1656	1707	N20	W50		07	20.88	16	SF	3	C		41		F	3817
PALE	24	1743	1752	1754	S20	E25		07	26.65	11	SF	3	C		23			3822
PALE	24	1751	1751	1755	N18	W51		07	20.86	4	SF	3	C		20			3817
HOLL	24	1805	1812	1838	N13	W90		07	17.96	33	SB	3	C					
PALE	24	1807	1810	1824	N14	W90		07	17.95	17	1N	3	C					3810
LEAR	25	0300	0301	0306	N21	W56		07	20.83	6	SF	3	C		25			3824
LEAR	25	0356	0356	0402	N21	W57		07	20.79	6	SF	3	C		22			3824
LEAR	25	0526	0527	0548	N20	W57		07	20.86	22	SN	3	C		17			3824
LEAR	25	0832	0838	0845	S21	E19		07	26.81	13	SF	3	C		25			3822
HOLL	25	1444	1444	1451	S28	E16		07	26.86	7	SF	3	C		25			3822
ISTA	26	0720		0742	S14	E33		07	28.80	22	SN						D	
LEAR	29	0357	0358	0409	S12	E76		08	3.89	12	SF	3	C		9			
ISTA	29	0723E		0739	S13	E73		08	3.82	16D	SF						D	
LEAR	30	0424	0428	0502	N13	W02		07	30.03	38	SF	3	C		62		F	
LEAR	30	0623	0625	0630	S10	E62		08	3.93	7	SF	3	C		24			3829
LEAR	30	0808	0834	0844	S12	E61		08	3.94	36	SN	3	C		27		F	3829
RAMY	30	1503	1753	1901	S11	E53		08	3.62	238	SN	3	C		135		K	3829
RAMY	30	1503	1836	1901	S11	E53		08	3.62	238	SN	3	C		174		K	3829
HOLL	30	1612	1642	1708	S09	E55		08	3.81	56	SF	3	C		33		F	3829
HOLL	30	2001	2003	2012	S10	E54		08	3.89	11	SF	3	C		29			3829
YUNN	31	0140	0151	0208	S10	E49		08	3.75	28	SN		C		16	.3		
LEAR	31	0251	0315	0339	S11	E53		08	4.11	48	SN	3	C		44		F	3829

H - ALPHA SOLAR FLARES

JULY 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	Hale Plage Region	CMP Mo	CMP Day	Duration (Min)	Imp	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10⁻⁶ Disk)	Area Measurement Corr (Sq Deg)	Remarks
PALE	31	0252	0253	0257	S09	E52		08	4.02	5	SF	3	C		20		3829
LEAR	31	0308	0313	0335	N06	W01		07	31.06	27	SF	3	C		61		F 3828
PALE	31	0309	0310	0329	N07	W01		07	31.06	20	SF	3	C		72		K 3828
PALE	31	0309	0318	0329	N07	W01		07	31.06	20	SF	3	C		57		F K 3828
RAMY	31	1818	1832	1858	N07	W08		07	31.16	40	SN	3	C		92		3828
PALE	31	1822	1826	1903	N06	W10		07	31.02	41	SN	3	C		138		UF 3828
PALE	31	2142	2150	2216	S11	E39		08	3.84	34	SN	3	C		81		K 3829
PALE	31	2142	2155	2216	S11	E39		08	3.84	34	SN	3	C		66		F K 3829
PALE	31	2232	2234	2243	N15	E58		08	5.33	11	SF	3	C		48		3830

"REMARKS":

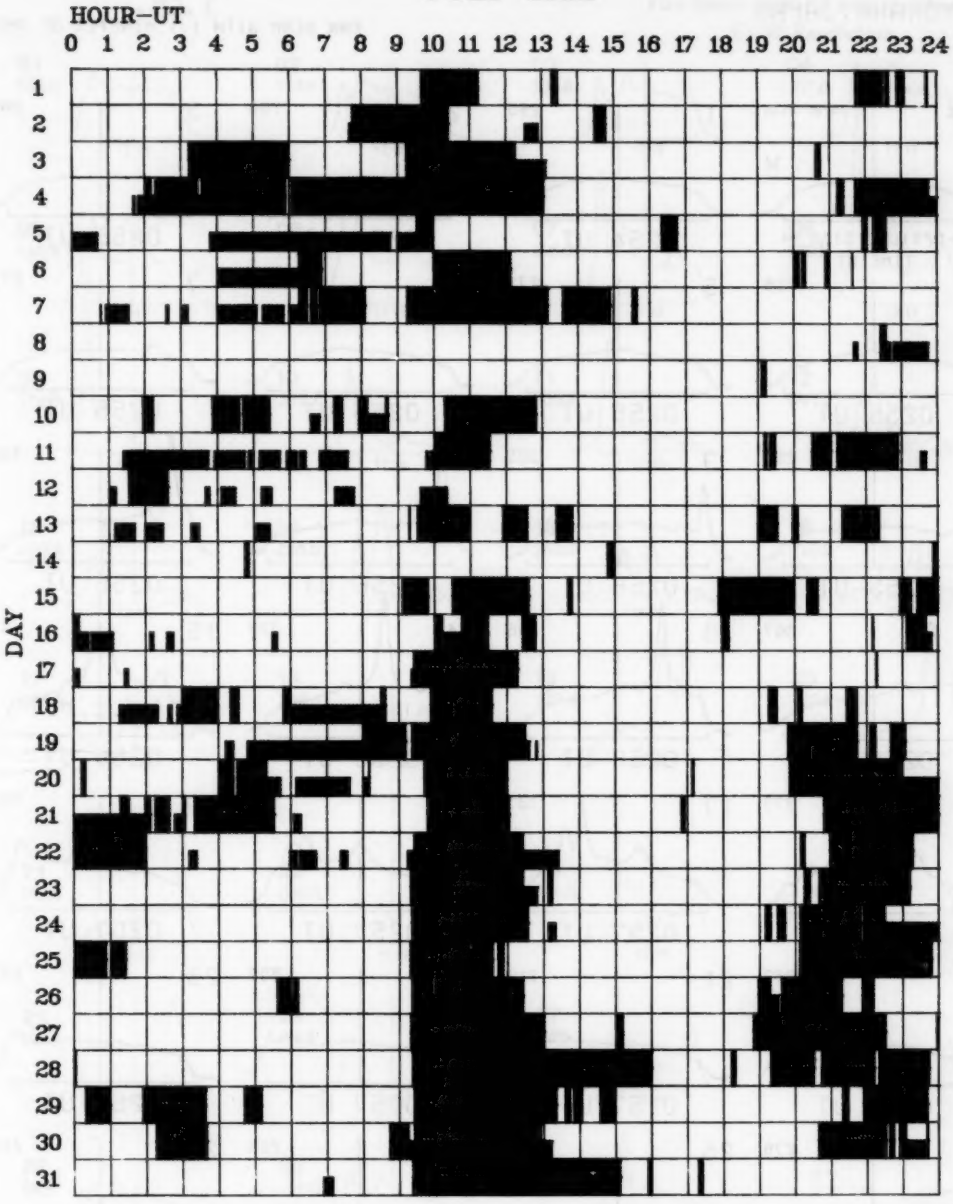
A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of CaII.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

The 4-digit number appearing under "Remarks" denotes the calcium plage region number assigned by the Space Environment Services Center in Boulder, Colorado.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

JULY 1982



Observatories included in total patrol:

Bucharest	Istanbul	Manila	Peking	Ramey
Holloman	Learmonth	Palehua	Purple Mt.	Wendelstein
				Yunnan

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

28
Jul 82

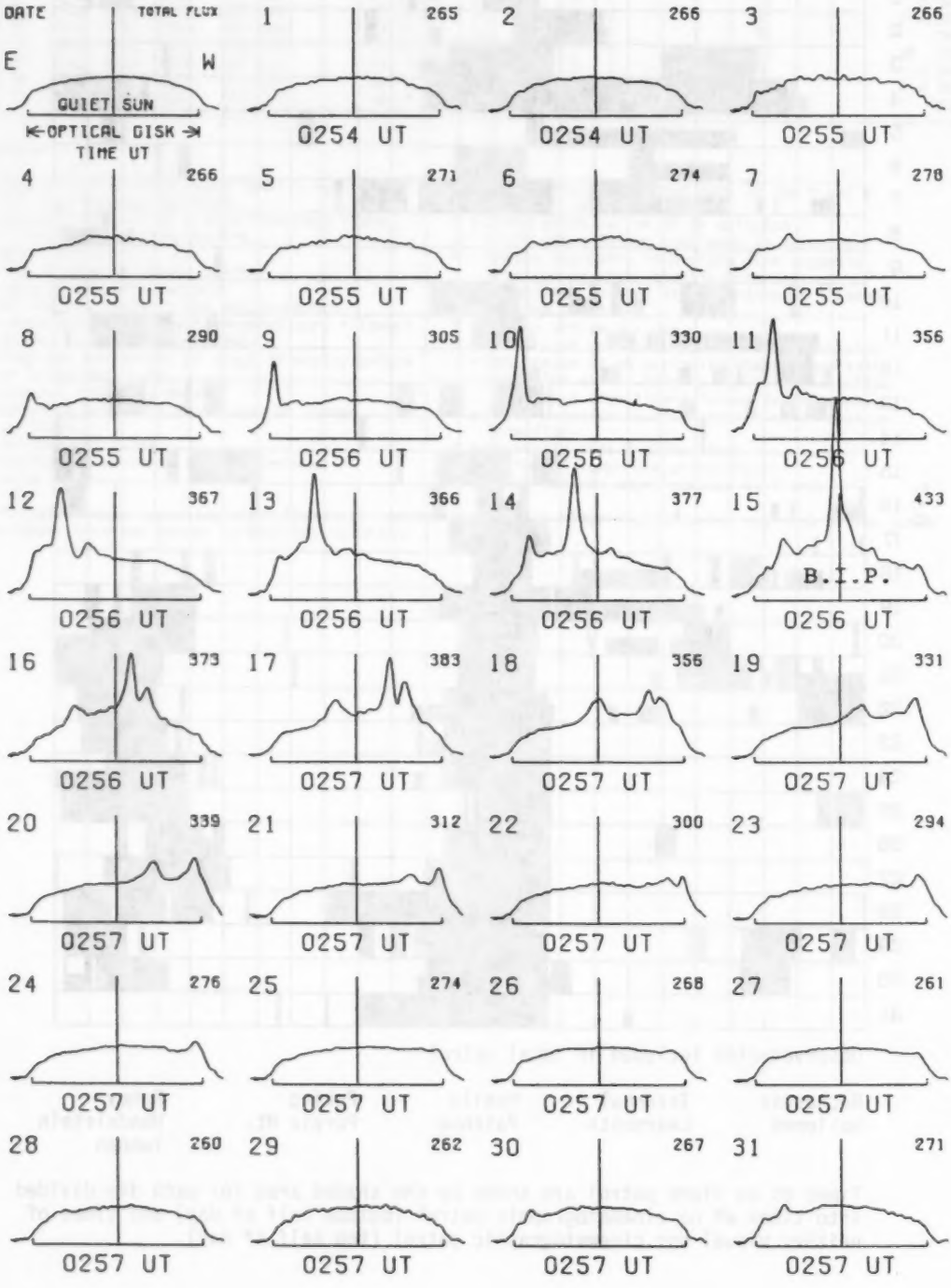
EAST-WEST SOLAR SCANS

JULY 1982

TOYOKAWA, JAPAN

3 CM

FAN BEAM WITH 1.1 MINUTES OF ARC

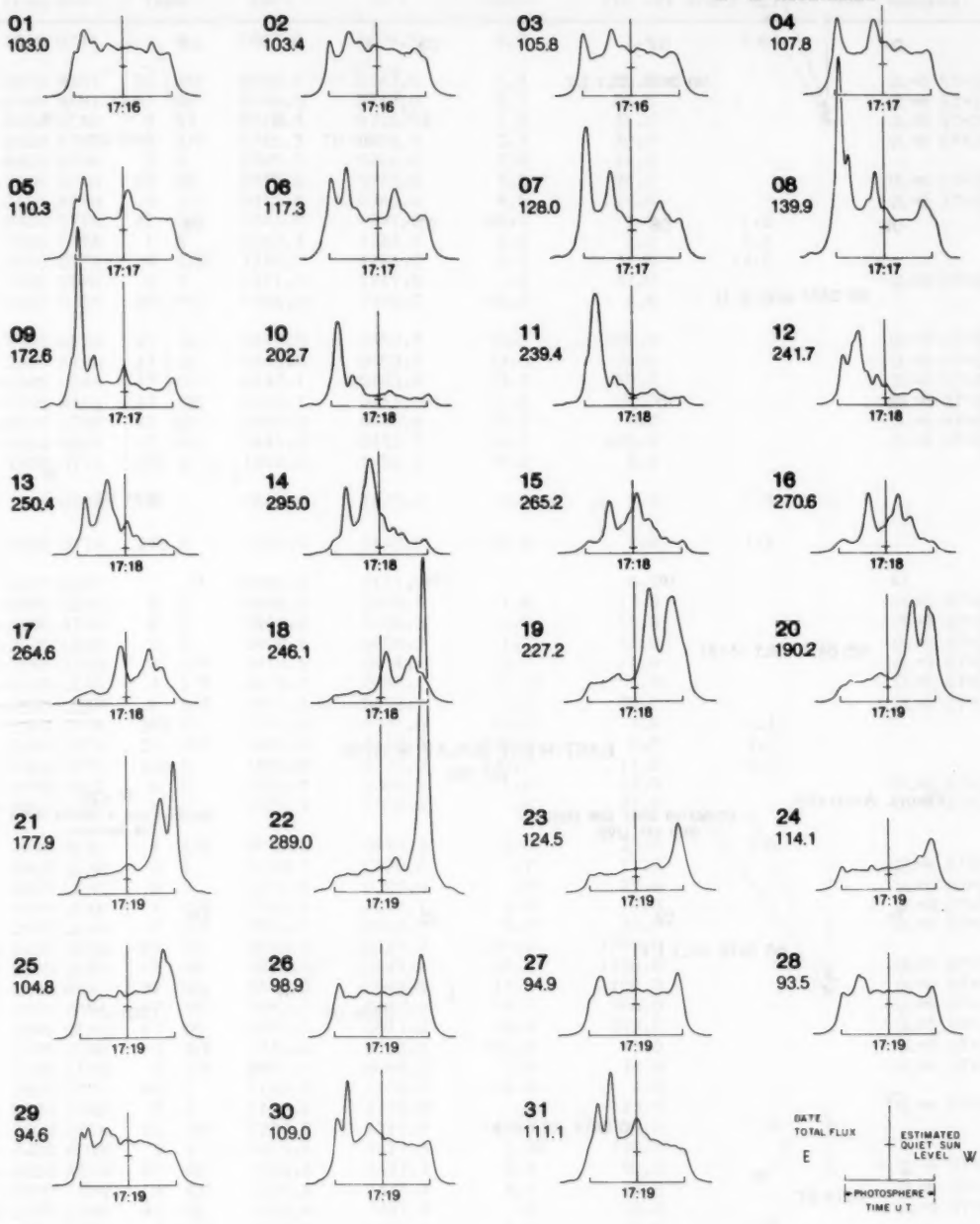


EAST-WEST SOLAR SCANS

JULY 1982

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

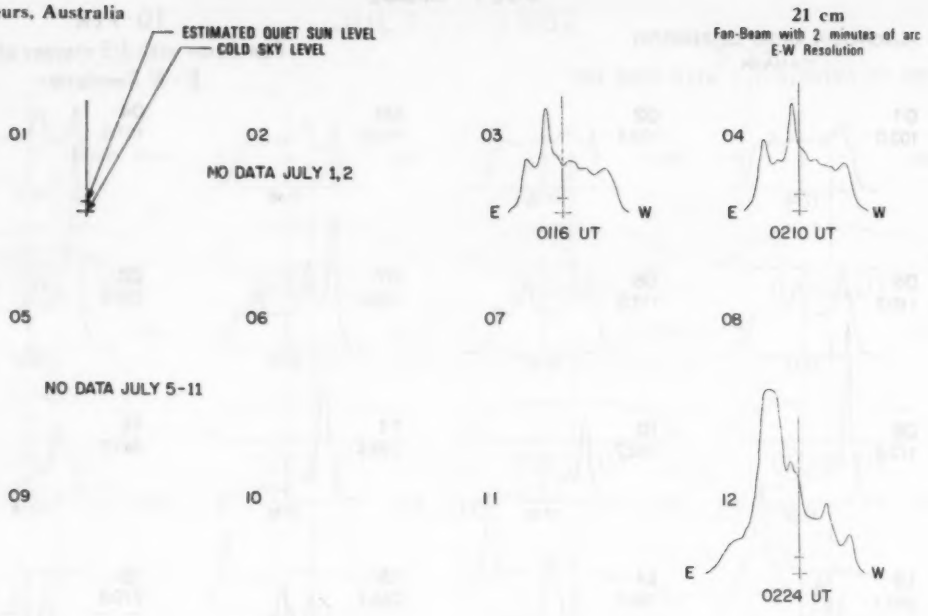


EAST-WEST SOLAR SCANS

JULY 1982

Fleurs, Australia

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution

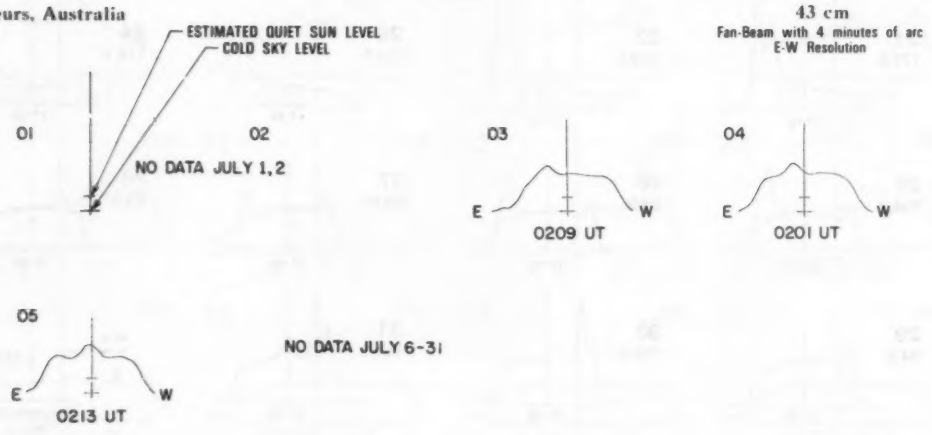


EAST-WEST SOLAR SCANS

JULY 1982

Fleurs, Australia

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	2800	OTTA	1	S	1602.0	1605.5	9.0	3.4	1.6		
03	8800	MANI	20	GRF	0345.0	0347.0	4.3	71.0			QL=6 ST=2 TYP=2
	2695	MANI	47	GB	0346.0	0347.0	5.1	89.0			QL=6 ST=2 TYP=5
	8800	LEAR	8	S	0745.3	0746.5	2.0	31.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0745.3	0746.5	3.7	30.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	0745.3	0746.6	2.0	42.0			
	2695	LEAR	47	GB	0745.6	0746.6	3.5	74.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0745.6	0746.6	4.5	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1243.0	1247.0	60.0	3.6	1.6		
	2800	OTTA	1	S	1243.7	1244.5	2.0	2.2	1.3		
	2800	OTTA	4	S/F	1740.7	1741.9	5.3	31.0	14.0		
	2695	SGMR	8	S	1741.6	1741.8	.2	37.0			QL=6 ST=2 TYP=3
	2800	OTTA	29	PBI	1746.0	1746.0	40.0	4.6	2.2		
04	8800	ATHN	47	GB	0440.0	0452.5	33.8	300.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	0440.0	0452.5	33.8	76.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0440.1	0440.8	23.2	10.0			QL=6 ST=2 TYP=5
	2695	MANI	47	GB	0440.1	0451.6	21.2	91.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0440.3	0440.8	24.7	8.0			QL=6 ST=2 TYP=5
	8800	MANI	47	GB	0441.6	0452.3	16.5	440.0			QL=6 ST=2 TYP=5
	2800	OTTA	240	R	1840.0	1950.0	70.0	3.4			
05	2800	OTTA	1	S	1642.0	1643.0	5.0	2.0	1.0		
06	2800	OTTA	240	R	2055.0	2110.0	15.0	2.8	1.4		
07	2695	PENT			0148.0	0151.0		6.2			
	8800	LEAR	8	S	0408.0	0408.1	1.8	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	0408.0	0408.3	2.0	13.0			QL=5 ST=2 TYP=3
	2695	LEAR	8	S	0408.1	0408.3	1.7	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0414.6	0416.1	5.7	15.0			QL=5 ST=2 TYP=3
	8800	LEAR	4	S/F	0415.0	0456.1	41.1D	6.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0415.8	0416.1	3.2	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	240	R	1310.0	1335.0	25.0	2.6	1.3		
	2800	OTTA	20	GRF	1425.0	1640.0	200.0	4.0	2.2		
	2800	OTTA	240	R	1840.0	2230.0	230.0	11.8	6.0		
	8800	PALE	8	S	2008.5	2008.8	1.6	24.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	2008.5	2008.8	.6	22.0			QL=6 ST=2 TYP=3
08	2695	PENT	4	S/F	0116.0	0118.2	5.0	23.0	7.6		
	8800	LEAR	8	S	0120.3	0120.6	1.7	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0306.8	0307.0	.3	23.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0309.1	0311.1	5.0	19.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0506.8	0508.5	5.0	20.0			QL=6 ST=2 TYP=3
	8400	BERN	47	GB	0640.0	0648.3	100.0	1275.0			
	8800	LEAR	49	GB	0640.3	0647.8	25.7	1100.0			QL=6 ST=2 TYP=6
	8800	MANI	49	GB	0641.0	0649.5	17.0	1100.0			QL=6 ST=2 TYP=6
	2695	MANI	47	GB	0642.3	0649.6	15.7	200.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0643.1	0647.8	19.5	219.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0736.6	0736.6	195.0	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0953.6	0959.5	7.4	34.0			QL=6 ST=2 TYP=3
	2800	OTTA	40	F	1146.0	1156.0	14.0	4.4			
	8800	SGMR	8	S	1155.6	1155.8	.4	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	22	GRF	1207.0	1211.5	19.0	7.8	2.6		
	8400	BERN	3	S	1425.0	1427.3	2.3D	129.0			
	8800	ATHN	47	GB	1426.6	1427.3	6.4	90.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1426.6	1427.3	6.4	19.0			QL=6 ST=2 TYP=3
	2695	SGMR	47	GB	1426.8	1427.1	.5	38.0			QL=6 ST=2 TYP=5
	2800	OTTA	4	S/F	1426.9	1427.2	3.1	27.6	7.8		
	8800	SGMR	47	GB	1427.1	1427.3	.2	58.0			QL=6 ST=2 TYP=5
	2800	OTTA	30	PBI	1430.0	1430.0	35.0	4.0	2.0		
	2800	OTTA	2	S/F	1432.0	1432.6	2.0	4.0			
	2800	OTTA	32A	ABS	1525.0	1620.0	170.0	-8.0	-4.0		
	2800	OTTA	1	S	1537.2	1537.5	1.0	4.0	1.4		
	8800	ATHN	8	S	1537.3	1537.6	1.5	9.0			QL=5 ST=2 TYP=3
	2695	ATHN	8	S	1537.3	1537.6	1.5	6.0			QL=5 ST=2 TYP=3
	2800	OTTA	8	S	1804.0	1804.4	.6	3.2	.6		
	2800	OTTA	4	S/F	2027.0	2031.5	13.0	24.0	6.0		
	2695	SGMR	8	S	2031.0	2031.5	1.3	31.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
08	8800	SGMR	8	S	2031.0	2031.6	1.3	31.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2031.1	2031.6	1.7	27.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	2031.1	2031.8	1.5	19.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	2127.6	2128.1	1.2	18.0			QL=5 ST=2 TYP=3
	2695	PENT	21	GRF	2240.0	0025.0	190.0D	22.4			
09	2695	PALE	4	S/F	0015.8	0018.3	14.0	37.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0016.1	0018.1	14.0	89.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0016.8	0018.1	13.3	30.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	0017.1	0018.3	24.0	100.0			QL=6 ST=2 TYP=5
	2695	PENT	1	S	0018.0	0018.1	1.2	2.6	1.3		
	2695	PENT	1	S	0028.6	0029.0	1.5	5.2	2.6		
	2695	PENT	4	S/F	0036.0	0036.8	3.0	15.4	4.6		
	2695	PENT	40	F	0108.5	0108.8	1.0	4.6			
	2695	PENT	8	S	0136.2	0136.3	.3	6.6			
	2695	PENT	4	S/F	0137.0	0138.3	6.0	10.8	4.0		
	2695	PENT	1	S	0144.5	0145.2	1.5	3.6	2.7		
	8800	LEAR	4	S/F	0426.8	0427.5	6.5	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0555.8	0557.0	5.5	160.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	0556.0U	0557.0U	5.0U	65.0			ONLY PAPER REC
	2695	MANI	49	GB	0556.0	0557.3	3.5	500.0			QL=6 ST=2 TYP=6
	2695	ATHN	47	GB	0556.0	0557.3	5.3	410.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0556.0	0557.3	4.0	430.0			QL=6 ST=2 TYP=5
	8800	MANI	47	GB	0556.0	0557.3	7.1	30.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0556.1	0557.0	8.2	210.0			QL=6 ST=2 TYP=5
	8400	BERN	46	C	0709.0U	0736.0U	300.0U	1100.0D			ONLY PAPER REC
	8800	LEAR	47	GB	0713.1	0716.0	7.2	87.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0713.3	0713.6	6.0	10.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0713.3	0713.6	1.5	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0713.3	0716.3	11.3	73.0			QL=6 ST=2 TYP=5
	8800	ATHN	49	GB	0729.3	0737.1	39.2	2399.0			QL=6 ST=2 TYP=6
	2695	ATHN	49	GB	0729.6	0737.3	34.9	2000.0			QL=6 ST=2 TYP=6
	8800	LEAR	49	GB	0732.0	0732.3	29.3	31.0			QL=6 ST=2 TYP=7
	8800	MANI	49	GB	0732.0	0736.6	11.5	5700.0			QL=6 ST=2 TYP=6
	2695	MANI	49	GB	0733.1	0737.0	13.4	2399.0			QL=6 ST=2 TYP=6
	2695	LEAR	49	GB	0733.3	0737.1	25.5	1800.0			QL=6 ST=2 TYP=7
	8800	ATHN	47	GB	0816.8	0834.3	65.2	230.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	0820.8	0838.3	61.2	63.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0822.1	0827.8	14.7	96.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0824.8	0828.1	12.0	27.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0836.8	0838.3	31.2	70.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0836.8	0839.3	31.2	169.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	0922.3	0925.3	46.2	33.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0922.3	0925.3	24.5	29.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0924.8	0926.3	1.8	21.0			QL=5 ST=2 TYP=3
	8800	SGMR	47	GB	1037.1	1040.3	18.7	42.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	1046.5	1046.6	10.1	31.0			QL=6 ST=2 TYP=3
	2800	OTTA	26A	FAL	1055.0E	1425.0	210.0D	-26.0			
	2800	OTTA	4	S/F	1059.0	1059.8	2.5	12.6	3.4		
	2800	OTTA	40	F	1118.5	1118.6	2.0	7.6			
	8800	ATHN	4	S/F	1123.0	1125.0	8.5	20.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1518.1	1518.3	.2	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1525.0	1532.0	12.0	3.0	1.5		
	2800	OTTA	2	S/F	1527.5	1528.0	1.0	6.8	3.3		
	2695	ATHN	47	GB	1527.6	1529.6	2.7	96.0			QL=6 ST=3 TYP=5
	2800	OTTA	4	S/F	1529.0	1529.4	2.0	130.0	26.0		
	2695	SGMR	47	GB	1529.3	1529.5	.3	100.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	1544.0	1544.3	1.2	3.2	1.5		
	2800	OTTA	20	GRF	1610.0	1620.0	30.0	4.6	2.3		
	8400	BERN	3	S	1617.0	1619.4	2.4D	50.0			
	8800	ATHN	20	GRF	1617.1	1619.6	9.5	59.0			QL=6 ST=2 TYP=2
	8800	SGMR	4	S/F	1618.6	1619.6	6.0	37.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1650.0	1705.0	45.0	7.0	3.6		
	2800	OTTA	3	S	1655.0	1657.5	7.0	10.2	5.2		
	8800	SGMR	8	S	1656.8	1657.3	1.7	22.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	1823.0	1823.1	1.3	39.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1823.0	1823.1	1.3	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	22	GRF	1910.0	1925.0	45.0	2.0	1.0		
	8800	SGMR	4	S/F	1928.3	1929.6	9.5	33.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1947.1	1948.3	1.2D	18.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
09	2695	PENT	23	GRF	2000.0	2004.0	18.0	2.6	1.3		
	2695	PENT	1	S	2011.0	2011.1	1.0	5.6	2.8		
	2800	OTTA	1	S	2024.5	2025.2	9.0	5.6	1.9		
	8800	PALE	47	GB	2024.6	2025.3	3.5	51.0			QL=6 ST=2 TYP=5
	8800	SGMR	8	S	2024.8	2025.3	.8	37.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2030.3	2030.5	1.3	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F	C	2106.0	2107.0	9.0	390.0	43.0		
	2695	PALE	47	GB	2106.3	2107.1	6.5	400.0			QL=6 ST=2 TYP=5
	8800	PALE	49	GB	2106.3	2107.1	3.7	730.0			QL=6 ST=2 TYP=6
	8800	SGMR	47	GB	2106.3	2107.1	2.5	420.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	2106.5	2107.1	5.0	400.0			QL=6 ST=2 TYP=5
	2800	OTTA	29	PBI	2115.0	2115.0	11.0	9.6	3.2		
	2800	OTTA	8	S	2148.4	2148.5	.6	3.0	1.7		
	2800	OTTA	20	GRF	2200.0	2220.0	35.0	2.0	1.0		
	8800	SGMR	47	GB	2203.5	2209.8	12.8	70.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2203.6	2203.8	12.0	19.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	2239.5	2240.5	4.0	8.0	4.0		
	8800	SGMR	47	GB	2239.6	2240.6	1.7	90.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	2250.8	2251.3	1.3	88.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	2250.8	2251.3	3.0	6.4	2.1		
	8800	PALE	47	GB	2251.8	2252.0	4.7	42.0			QL=2 ST=3 TYP=5
	2695	PENT	23	GRF	2300.0	2345.0	175.0	12.0	6.0		
	8800	PALE	47	GB	2303.3	2303.8	2.7	50.0			QL=6 ST=2 TYP=5
	2695	PENT	3	S	2303.6	2304.2	1.8	18.4	9.2		
	8800	SGMR	8	S	2304.0	2304.1	.1	20.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	2304.0	2304.3	1.5	19.0			QL=6 ST=2 TYP=3
	2695	PENT	29	PBI	2305.4	2305.4	13.0	7.6	3.4		
10	2695	LEAR	8	S	0029.3	0029.5	.2	5.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0036.8	0037.0	.2	11.0			QL=6 ST=2 TYP=3
	2695	PENT	4	S/F	0125.5	0126.0	4.0	25.0	12.0		
	8800	LEAR	47	GB	0132.8	0138.3	16.3	169.0			QL=6 ST=2 TYP=5
	8800	MANI	47	GB	0135.0	0201.0	27.0	210.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0137.3	0138.3	10.8	180.0			QL=2 ST=2 TYP=5
	2695	MANI	47	GB	0138.0	0201.1	26.8	320.0			QL=6 ST=2 TYP=5
	2695	LEAR	8	S	0138.3	0138.5	1.8	13.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0138.5	0138.6	1.1	13.0			QL=2 ST=2 TYP=3
	8800	PALE	47	GB	0158.8	0200.3	3.0	200.0			QL=2 ST=2 TYP=5
	8800	LEAR	47	GB	0158.8	0200.3	2.5	200.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	0158.8	0200.5	3.8	139.0			QL=2 ST=2 TYP=5
	2695	LEAR	47	GB	0159.0	0200.3	3.3	139.0			QL=6 ST=2 TYP=5
	2695	MANI	47	GB	0315.8	0317.1	5.3	63.0			QL=6 ST=2 TYP=5
	8800	MANI	47	GB	0316.1	0317.1	3.9	150.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0316.3	0317.0	6.3	150.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0316.3	0317.1	5.5	200.0			QL=2 ST=2 TYP=5
	2695	LEAR	47	GB	0316.6	0317.0	5.5	62.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	0316.6	0317.1	3.7	70.0			QL=2 ST=2 TYP=5
	8400	BERN	45	C	0713.5	0719.4	5.9D	104.0			
	8400	BERN	4	S/F	0827.5	0832.9	12.0	202.0			
	8400	BERN	3	S	0859.3	0859.9	9.0	82.0			
	8400	BERN	3	S	0926.0	0926.3	3.0	69.0			
	8400	BERN	45	C	0940.0U	1012.6	60.0D	38.0			
	8400	BERN	3	S	1125.0	1125.1	1.0	18.0			
	2800	OTTA	1	S	1147.0	1147.8	2.0	6.6	2.2		
	8800	ATHN	47	GB	1154.8	1203.1	9.2	52.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1155.0	1200.3	13.0	39.0			
	2695	ATHN	4	S/F	1155.0	1203.1	12.1	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1155.5	1155.9	1.2	6.0	3.2		
	2800	OTTA	1	S	1159.5	1200.2	5.0	6.0	3.0		
	8800	SGMR	8	S	1159.8	1200.1	.8	33.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1225.0	1232.1	16.0	105.0			
	8800	SGMR	8	S	1225.3	1225.8	.7	20.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1231.3	1232.3	13.5	96.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1231.3	1234.1	13.5	21.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1231.5	1232.1	6.8	110.0			QL=6 ST=2 TYP=5
	2800	OTTA	4	S/F	1231.5	1233.0	10.0	10.6	3.6		
	2695	SGMR	4	S/F	1231.6	1233.8	2.7	46.0			QL=6 ST=2 TYP=3
	2800	OTTA	240	R	1245.0	1315.0	30.0	3.4	1.7		
	8400	BERN	3	S	1348.0	1349.1	5.0	35.0			
	8800	SGMR	8	S	1348.6	1349.0	1.2	43.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
10	2800	OTTA	240AR	1350.0	1355.0	5.0	3.4	1.7		
	2800	OTTA	1 S	1352.0	1353.0	2.0	3.2	1.5		
	8800	SGMR	4 S/F	1352.1	1353.1	6.2	20.0			QL=6 ST=2 TYP=3
	2695	SGMR	4 S/F	1352.8	1355.1	5.8	44.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1424.0	1424.0	6.0	3.4	1.2		
	8800	SGMR	4 S/F	1424.0	1425.6	2.1	16.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1436.1	1436.6	1.0	18.0			QL=6 ST=3 TYP=3
	8800	SGMR	8 S	1526.3	1526.5	.2	18.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	1602.1	1604.6	6.2	18.0			QL=6 ST=2 TYP=3
	8400	BERN	45 C	1604.0	1605.0	40.00	40.0U			
	2800	OTTA	240AR	1604.0	1625.0	21.0	8.2	4.1		
	2800	OTTA	3 S	1604.2	1604.8	3.0	12.6	4.2		
	8800	ATHN	47 GB	1604.3	1604.6	2.8	55.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	1608.3	1617.6	17.8	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	40 F	1610.0	1617.0	14.0	6.6			
	8800	ATHN	4 S/F	1612.8	1618.6	13.3	34.0			QL=6 ST=2 TYP=3
	2800	OTTA	23 GRF	1635.0	1730.0	115.0	9.0			
	8800	PALE	4 S/F	1641.8	1642.6	2.7	30.0			QL=2 ST=2 TYP=3
	2800	OTTA	1 S	1642.5	1645.0	4.5	5.2	3.0		
	2695	PENT	1 S	1702.0	1702.5	4.0	7.2	3.3		
	8400	BERN	3 S	1702.0U	1702.5	4.0U	30.0U			
	8800	SGMR	8 S	1702.3	1702.5	.5	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1708.0	1709.0	2.0	5.2	3.5		
	8800	PALE	8 S	1708.3	1708.6	1.5	26.0			QL=2 ST=2 TYP=3
	2695	ATHN	47 GB	1715.5	1727.0	16.3	53.0			QL=6 ST=2 TYP=5
	2800	OTTA	1 S	1801.5	1802.5	3.0	3.8	1.9		
	2800	OTTA	1 S	1852.5	1853.3	2.0	3.2	1.6		
	2800	OTTA	4 S/F	1859.5	1901.0	3.5	23.0	15.4		
	8800	SGMR	4 S/F	1859.6	1902.1	7.5	49.0			QL=6 ST=2 TYP=3
	2800	OTTA	29 PBI	1903.0	1903.0	10.0	6.6	2.2		
	2800	OTTA	23 GRF	1935.0		370.0	17.4			
	8800	SGMR	47 GB	1948.6	1949.0	2.7	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	4 S/F	1949.0	1950.5	10.0	47.0	11.8		
	2695	SGMR	47 GB	1949.6	1950.5	1.2	56.0			QL=6 ST=2 TYP=5
	8800	SGMR	49 GB	2002.0	2002.1	22.3	39.0			QL=6 ST=2 TYP=6
	2800	OTTA	46F C	2007.0	2015.8	40.0	175.0	30.0		
	2695	SGMR	47 GB	2012.0	2015.6	12.3	200.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	2024.3	2024.5	14.8	200.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	2024.3	2024.6	5.7	51.0			QL=6 ST=2 TYP=5
	2800	OTTA	45 C	2049.5	2049.7	2.5	10.2	5.1		
	2800	OTTA	3 S	2104.0	2107.8	7.0	59.0	20.0		
	8800	SGMR	47 GB	2106.3	2107.6	5.0	340.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	2107.3	2107.8	1.5	69.0			QL=6 ST=2 TYP=5
	2800	OTTA	45 C	2135.5	2141.0	9.0	76.0	29.2		
	8800	SGMR	47 GB	2136.5	2136.8	7.3	21.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	2138.8	2141.3	3.3	86.0			QL=6 ST=2 TYP=5
	2800	OTTA	21 GRF	2206.0	2215.0	35.0	15.4	5.2		
	2800	OTTA	1 S	2210.0	2210.3	2.0	8.6	4.3		
	2695	PENT	4 S/F	2312.0	2320.3	18.0	187.0	30.0		
	8800	SGMR	8 S	2313.5	2313.6	.3	39.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	2313.5	2313.8	.30	40.0			QL=6 ST=2 TYP=3
11	2695	PENT	3 S	0015.5	0016.7	6.0	20.0	7.0		
	2695	PENT	1 S	0048.3	0049.0	2.5	7.6	3.8		
	2695	PENT	46F C	0053.5	0059.8	12.0	85.0	18.8		
	2695	PENT	31 ABS	0113.0	0132.0	35.0	-7.6	-4.0		
	8800	PALE	4 S/F	0234.6	0234.6	4.5	43.0			QL=2 ST=2 TYP=3
	8800	ATHN	47 GB	0401.6	0405.3	11.5	139.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	0402.0	0405.3	9.3	20.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	0402.5	0402.6	7.5	31.0			QL=2 ST=2 TYP=5
	2695	MANI	4 S/F	0402.8	0421.0	21.0	49.0			QL=6 ST=2 TYP=3
	8800	MANI	49 GB	0402.8	0421.0	26.2	590.0			QL=6 ST=2 TYP=6
	2695	PALE	4 S/F	0405.3	0405.6	3.3	24.0			QL=2 ST=2 TYP=3
	8800	ATHN	47 GB	0414.6	0418.6	10.7	400.0			QL=6 ST=2 TYP=5
	2695	ATHN	4 S/F	0417.1	0418.6	4.5	46.0			QL=6 ST=2 TYP=3
	8800	PALE	47 GB	0419.1	0419.8	2.9	500.0			QL=2 ST=2 TYP=5
	2695	PALE	47 GB	0419.3	0419.8	2.7	61.0			QL=2 ST=2 TYP=5
	8400	BERN	45 C	0614.5	0615.4	12.0	168.0			
	8800	ATHN	47 GB	0614.6	0615.3	9.2	139.0			QL=6 ST=3 TYP=5
	8800	ATHN	4 S/F	0614.6	0615.3	9.2	139.0			QL=6 ST=3 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
11	2695	ATHN	4	S/F	0614.8	0615.3	9.0	27.0			QL=6 ST=3 TYP=3
	8400	BERN	3	S	0636.0	0637.2	6.0	500.0			
	8400	BERN	3	S	0700.0	0700.8	2.0U	88.0			
	8800	ATHN	47	GB	0700.3	0700.6	1.5	69.0			QL=6 ST=3 TYP=5
	2695	LEAR	4	S/F	0715.5	0718.8	9.6	43.0			QL=5 ST=3 TYP=3
	8800	LEAR	8	S	0733.6	0734.3	1.2	11.0			QL=5 ST=2 TYP=3
	8400	BERN	3	S	0734.3	0738.4	8.0	383.0			
	8800	ATHN	47	GB	0737.3	0738.3	4.5	350.0			QL=6 ST=3 TYP=5
	2695	ATHN	4	S/F	0737.3	0738.3	6.0	24.0			QL=6 ST=3 TYP=3
	8800	LEAR	47	GB	0737.5	0738.3	3.5	400.0			QL=6 ST=2 TYP=5
	2695	LEAR	8	S	0738.1	0738.3	.2	17.0			QL=6 ST=2 TYP=3
	8800	MANI	20	GRF	0738.6	0739.5	3.2	169.0			QL=6 ST=2 TYP=2
	2695	MANI	20	GRF	0738.8	0739.8	2.2	20.0			QL=6 ST=2 TYP=2
	8400	BERN	4	S/F	0810.0	0811.3	20.0	308.0			
	8800	ATHN	47	GB	0810.1	0811.5	7.9	239.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0810.1	0811.5	5.4	27.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0810.5	0811.3	7.6	340.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0810.8	0811.6	3.8	38.0			QL=6 ST=2 TYP=3
	2695	MANI	20	GRF	0811.0	0813.0	4.8	24.0			QL=6 ST=2 TYP=2
	8800	MANI	20	GRF	0812.0	0813.1	4.0	230.0			QL=6 ST=2 TYP=2
	2695	ATHN	8	S	0826.0	0826.8	2.0	11.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0826.1	0826.8	2.2	21.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0826.8	0827.6	1.5	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0826.8	0828.0	2.2	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0846.3	0849.1	4.0	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0846.5	0847.6	2.6	23.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	0926.3	0930.1	17.2	68.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0927.6	0928.8	15.9	27.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	0945.0	0952.5U	40.0	64.0			ONLY PAPER REC
	2695	ATHN	4	S/F	1034.6	1041.1	8.7	46.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1034.8	1041.3	18.0	160.0			QL=6 ST=2 TYP=5
	8400	BERN	4	S/F	1036.0	1042.5	20.0	135.0			ONLY PAPER REC
	8800	SGMR	47	GB	1040.8	1042.5	7.3	160.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1042.0	1042.1	.8	59.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1103.1	1106.3	5.5	48.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1103.6	1107.1	7.7	63.0			QL=6 ST=2 TYP=5
	2800	OTTA	40	F	1104.0	1107.3	5.0	53.0			
	8400	BERN	3	S	1105.0	1108.0U	8.0	55.0			ONLY PAPER REC
	8800	SGMR	47	GB	1107.1	1108.1	1.4	68.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1125.5	1128.8	9.0	53.0			QL=6 ST=2 TYP=5
	2800	OTTA	2	S/F	1127.0	1130.0	6.0	8.2	3.8		
	8800	SGMR	47	GB	1127.6	1129.6	3.4	60.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	1237.3	1238.3	3.8	30.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1237.3	1238.3	3.7	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1238.3	1239.3	3.5	18.6	9.0		
	8800	SGMR	4	S/F	1238.6	1239.1	2.5	38.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1251.5	1254.0	5.8	20.0			QL=6 ST=2 TYP=3
	8400	BERN	45	C	1333.0	1410.0U	54.0	400.0			ONLY PAPER REC
	8800	ATHN	47	GB	1336.6	1341.3	31.0	66.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	1336.6	1358.6	33.7	77.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1338.8	1342.6	27.3	68.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	1340.0	1455.0	7.5D	9.0	4.4		
	2695	SGMR	8	S	1351.1	1352.1	1.0D	30.0			QL=6 ST=2 TYP=3
	2800	OTTA			1352.0	1359.5	8.0D	85.0			
	2695	SGMR	8	S	1406.1	1406.5	.4D	32.0			QL=6 ST=2 TYP=3
	8800	SGMR	20	GRF	1406.1	1406.6	.7	33.0			QL=6 ST=2 TYP=2
	2800	OTTA	2	S/F	1440.9	1441.0	1.0	6.0	3.0		
	2800	OTTA	2	S/F	1452.0	1453.2	5.0	6.0			
	8800	ATHN	47	GB	1515.1	1518.5	17.5	66.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1517.0	1519.5	12.0	64.0			ONLY PAPER REC
	8800	SGMR	47	GB	1518.5	1519.3	2.6	72.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1557.1	1602.0	21.5	24.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1600.0	1604.8	10.8	10.0			QL=6 ST=2 TYP=3
	2800	OTTA	45	C	1601.0	1602.7	9.0	12.2	4.0		
	2800	OTTA	21	GRF	1625.0	1755.0	205.0	15.0	7.5		
	8800	SGMR	4	S/F	1646.1	1649.3	6.7	29.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1648.6	1649.0	.4D	27.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1650.0U	1705.4	33.0U	210.0			ONLY PAPER REC
	8800	SGMR	47	GB	1656.1	1702.3	19.2	76.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	1656.8	1706.1	14.8	69.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
11	8800	ATHN	47	GB	1656.8	1706.1	14.5	130.0			QL=6 ST=2 TYP=5
	2800	OTTA	4	S/F	1657.0	1706.0	41.0	93.0	21.0		
	2695	SGMR	47	GB	1657.3	1703.8	24.8	64.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1702.3	1702.3	26.2	100.0			QL=5 ST=2 TYP=5
	2695	PALE	47	GB	1702.3	1704.3	26.2	70.0			QL=5 ST=2 TYP=5
	2800	OTTA	3	S	1814.0	1815.0	6.0	27.6	6.9		
	8800	SGMR	47	GB	1814.5	1815.0	1.1	92.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1814.5	1815.1	5.0	119.0			QL=6 ST=2 TYP=5
	2695	PALE	8	S	1814.6	1815.0	1.7	27.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	1849.1	1850.3	12.5	72.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1849.6	1852.6	13.5	90.0			QL=6 ST=2 TYP=5
	2800	OTTA	4	S/F	1906.0	1910.7	7.0	19.4	7.0		
	8800	SGMR	47	GB	1908.3	1910.5	4.8	169.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1909.3	1910.8	6.5	200.0			QL=6 ST=2 TYP=5
	8800	SGMR	49	GB	1932.5	1933.1	6.1	560.0			QL=6 ST=2 TYP=6
	2800	OTTA	45	C	1932.5	1934.0	8.0	104.0	35.2		
	8800	PALE	49	GB	1932.6	1933.1	6.9	700.0			QL=6 ST=2 TYP=6
	2695	SGMR	47	GB	1932.6	1934.0	5.7	119.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1932.6	1934.1	7.0	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	23	GRF	1955.0	2330.0	318.0	45.0	21.8		
	8800	SGMR	8	S	2142.6	2142.8	.2	24.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2142.8	2142.8	1.2	24.0			QL=6 ST=2 TYP=3
	2800	OTTA	46F	C	2144.0	2147.0	8.0	110.0	27.0		
	2695	PALE	47	GB	2145.5	2147.1	5.8	100.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	2145.6	2147.1	4.5	100.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	2145.8	2147.1	5.2	130.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	2145.8	2147.3	6.3	200.0			QL=6 ST=2 TYP=5
	2800	OTTA	46F	C	2201.0	2208.3	12.0	59.0	25.0		
	2695	PALE	4	S/F	2201.1	2203.5	15.5	46.0			QL=5 ST=2 TYP=3
	8800	PALE	47	GB	2202.0	2208.8	12.1	70.0			QL=5 ST=2 TYP=5
	8800	SGMR	47	GB	2202.1	2203.6	11.7	42.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	2202.6	2203.5	7.0	43.0			QL=6 ST=2 TYP=5
	8800	PALE	4	S/F	2231.0	2231.1	2.6	47.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	2305.3	2306.6	20.8	87.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	2314.6	2316.0	3.9	49.0			QL=4 ST=2 TYP=3
	8800	SGMR	8	S	2314.8	2315.1	.3	37.0			QL=4 ST=2 TYP=3
	2695	LEAR	4	S/F	2322.0E	2322.5	8.0D	38.0			QL=5 ST=2 TYP=3
	8800	LEAR	47	GB	2322.0E	2322.5	8.0D	139.0			QL=5 ST=2 TYP=5
	8800	PALE	47	GB	2326.1	2326.6	30.7	130.0			QL=6 ST=2 TYP=5
12	2695	PALE	8	S	0016.3	0016.8	1.8	20.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0016.5	0016.6	1.8	37.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0052.8	0055.1	18.8	169.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0053.5	0055.1	18.8	42.0			QL=6 ST=2 TYP=5
	2695	PALE	4	S/F	0054.3	0055.1	2.5	46.0			QL=6 ST=2 TYP=3
	8800	PALE	49	GB	0054.3	0055.1	11.5	219.0			QL=6 ST=2 TYP=6
	2695	MANI	47	GB	0054.6	0101.0	11.7	79.0			QL=6 ST=2 TYP=5
	8800	MANI	47	GB	0054.6	0101.1	8.5	280.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0226.6	0226.8	2.5	70.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0226.6	0227.1	1.7	56.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0310.1	0310.6	24.9	42.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0310.3	0311.0	8.0	97.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	0310.8	0312.3	9.2	76.0			QL=5 ST=2 TYP=5
	8800	PALE	4	S/F	0312.1	0312.1	7.9	40.0			QL=5 ST=2 TYP=3
	8800	ATHN	4	S/F	0521.3	0603.5	129.2	37.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0529.1	0606.8	42.4	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	20	GRF	0536.6	0621.3	85.4	119.0			QL=6 ST=2 TYP=2
	2695	LEAR	20	GRF	0538.0	0621.3	79.3	40.0			QL=6 ST=2 TYP=2
	8400	BERN	47	GB	0600.0U	0958.2U	480.0U	3200.0D			
	8800	ATHN	4	S/F	0746.6	0747.1	3.0	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0747.6	0747.8	1.0	34.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0747.8	0748.6	1.3	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0813.5	0813.8	3.3	74.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	0813.6	0814.1	7.7	62.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0813.6	0814.3	7.2	65.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	0813.8	0814.1	7.5	61.0			QL=6 ST=2 TYP=5
	2695	ATHN	49	GB	0857.3	0920.5	114.2	310.0			QL=6 ST=2 TYP=6
	8800	ATHN	49	GB	0858.6	0921.1	112.9	1199.0			QL=6 ST=2 TYP=6
	8800	LEAR	49	GB	0912.0	0920.8	25.0D	980.0			QL=4 ST=2 TYP=6
	2695	LEAR	47	GB	0912.8	0935.6	24.2D	470.0			QL=4 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
12	2695	MANI	49	GB	0913.5	0942.5	40.5	1100.0			QL=6 ST=2 TYP=6
	8800	MANI	49	GB	0917.5	0946.3	36.5	6200.0			QL=6 ST=2 TYP=6
	2695	SGMR	49	GB	0951.5	0952.5	11.6	430.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	0957.1	0959.3	6.0	480.0			QL=6 ST=2 TYP=6
	2695	SGMR	49	GB	1003.1	1003.3	7.7	900.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	1003.1	1005.8	7.7	740.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	1010.8	1013.1	13.0	790.0			QL=6 ST=2 TYP=6
	2695	SGMR	49	GB	1010.8	1013.8	13.0	1199.0			QL=6 ST=2 TYP=6
	2695	SGMR	47	GB	1023.8	1023.8	10.0	480.0			QL=6 ST=2 TYP=5
	8800	SGMR	49	GB	1023.8	1023.8	10.0	510.0			QL=6 ST=2 TYP=6
	2695	SGMR	47	GB	1033.8	1034.3	8.2	260.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1033.8	1034.3	8.2	260.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1042.0	1042.1	8.5	169.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1042.0	1042.1	8.5	230.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1050.5	1050.6	8.1	139.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1050.5	1051.1	8.1	400.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1058.6	1059.0	8.5	400.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1058.6	1059.0	8.5	139.0			QL=6 ST=2 TYP=5
	2800	OTTA	26A	FAL	1100.0E	1750.0	410.00	-154.0			
	8800	SGMR	47	GB	1107.1	1107.3	7.5	340.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1107.1	1107.3	7.5	180.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1114.6	1114.8	9.5	189.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1114.6	1115.3	9.5	310.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1128.1	1128.3	13.7	260.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1128.1	1130.1	13.7	180.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1141.8	1142.0	13.5	160.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1141.8	1142.0	13.5	200.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1155.3	1155.5	11.3	139.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1155.3	1156.3	11.3	130.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1206.6	1207.1	11.7	139.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1206.6	1207.1	11.7	100.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1218.3	1218.8	9.8	70.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1218.3	1220.3	9.8	139.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1228.1	1228.3	10.5	119.0			QL=6 ST=2 TYP=5
	8800	SGMR	20	GRF	1228.1	1228.5	10.5	40.0			QL=6 ST=2 TYP=2
	2695	SGMR	47	GB	1253.6	1253.6	5.7	100.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	1326.0	1326.8	2.0	4.2	1.4		
	2695	ATHN	20	GRF	1328.6	1338.3	25.7	7.0			QL=6 ST=3 TYP=2
	2695	ATHN	20	GRF	1329.3	1339.1	25.3	7.0			QL=6 ST=2 TYP=2
	8800	ATHN	20	GRF	1330.3	1344.6	24.5	18.0			QL=6 ST=3 TYP=2
	8800	ATHN	47	GB	1530.6	1531.5	3.0	95.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1530.8	1531.5	2.7	10.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1531.0	1531.1	1.0	16.2	5.4		
	8800	SGMR	47	GB	1531.0	1531.3	.8	110.0			QL=6 ST=2 TYP=5
	8400	BERN	4	S/F	1531.0	1531.3	1.0	104.0			
	2695	SGMR	8	S	1532.3	1533.1	1.0	27.0			QL=6 ST=2 TYP=3
	2695	ATHN	20	GRF	1538.1	1549.5	22.2	10.0			QL=6 ST=2 TYP=2
	8800	ATHN	20	GRF	1538.1	1549.5	22.0	32.0			QL=6 ST=2 TYP=2
	2695	SGMR	8	S	1548.6	1549.1	.5	28.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1549.1	1549.3	.5	29.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1628.6	1628.8	1.0	62.0			QL=6 ST=2 TYP=5
	8800	ATHN	8	S	1628.6	1629.1	2.0	46.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1803.0	1810.0	20.0	4.4	2.2		
	8800	PALE	47	GB	1808.8	1809.3	7.5	92.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1809.1	1809.3	3.2	60.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	1809.1	1809.8	5.2	41.0			QL=6 ST=2 TYP=3
	2800	OTTA	23	GRF	1855.0	2055.0	235.0	19.0	9.0		
	2800	OTTA	40	F	1905.7	1906.7	4.0	188.0			
	8800	SGMR	47	GB	1906.3	1908.1	2.5	100.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1906.6	1907.0	1.5	130.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	1906.6	1908.1	3.5	180.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	1906.8	1907.0	2.5	189.0			QL=6 ST=2 TYP=5
	8800	PALE	49	GB	2029.3	2041.6	26.2	840.0			QL=6 ST=3 TYP=6
	2800	OTTA	1	S	2034.5	2035.5	2.5	5.6	2.6		
	2800	OTTA	3	S	2040.5	2042.0	9.0	27.0	11.2		
	2695	PALE	4	S/F	2041.1	2042.3	3.2	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	40	F	2051.0	2053.0	3.0	10.7			
	8800	PALE	4	S/F	2055.8	2057.6	9.3	34.0			QL=6 ST=2 TYP=3
	2695	PENT	22	GRF	2310.0	2320.0	130.0	10.0	5.0		
13	2695	LEAR	47	GB	0227.8	0227.8	12.0	54.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
13	2695	PALE	4	S/F	0227.8	0229.3	8.5	46.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0259.8	0301.3	4.5	21.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0300.1	0300.5	1.0	32.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0532.1	0532.3	1.2	20.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	0532.3	0532.6	.5	9.0			QL=6 ST=3 TYP=3
	8800	LEAR	8	S	0818.6	0819.1	1.4	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0915.0	0915.3	.5	18.0			QL=5 ST=2 TYP=3
	8800	LEAR	8	S	0915.0	0915.3	.5	30.0			QL=5 ST=2 TYP=3
	8800	ATHN	4	S/F	1114.8	1116.5	7.2	32.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1115.3	1115.8	1.3	30.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1214.0	1214.3	.3D	37.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1223.5	1228.6	10.8	54.0			QL=6 ST=2 TYP=5
	2800	OTTA	20	GRF	1315.0	1410.0	165.0	48.0	15.8		
	2695	ATHN	20	GRF	1348.5	1409.6	33.5	41.0			QL=6 ST=2 TYP=2
	8800	ATHN	20	GRF	1349.1	1409.3	32.9	97.0			QL=6 ST=2 TYP=2
	8800	SGMR	47	GB	1358.1	1404.8	15.2	77.0			QL=6 ST=3 TYP=5
	2695	SGMR	20	GRF	1359.0	1402.8	14.3	46.0			QL=6 ST=3 TYP=2
	8400	BERN	21	GRF	1400.0U	1409.1	110.0U	106.0			
	8800	SGMR	47	GB	1427.8	1428.5	15.5	63.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1427.8	1429.5	15.5	63.0			QL=6 ST=2 TYP=5
	8800	SGMR	20	GRF	1443.3	1444.6	20.2	51.0			QL=6 ST=2 TYP=2
	2695	SGMR	47	GB	1443.3	1444.8	20.2	63.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	1539.8	1540.6	2.8	47.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1605.0	1740.0	170.0	9.0	4.4		
	8400	BERN	3	S	1624.0	1624.5	2.0	63.0			
	8800	ATHN	47	GB	1624.1	1624.6	1.5	57.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1627.4	1627.5	3.0	28.8	7.2		
	2800	OTTA	23	GRF	2120.0	2155.0	140.0	12.4	6.2		
	2800	OTTA	8	S	2228.0	2228.0	.1	10.8			
14	8800	LEAR	4	S/F	0009.1	0010.8	8.0	47.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0059.8	0100.8	23.3	30.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	0641.3	0641.5	1.3	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0641.3	0641.8	9.8	27.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0641.5	0641.6	1.6	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	20	GRF	0653.3	0654.0	3.5	20.0			QL=6 ST=2 TYP=2
	8400	BERN	41	F	0956.5	1042.3	90.0D	136.0			
	2695	ATHN	4	S/F	1009.0	1010.0	6.1	30.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1009.1	1009.8	5.2	37.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	1031.8	1033.6	12.3	37.0			QL=6 ST=2 TYP=3
	8800	SGMR	47	GB	1032.3	1033.6	18.0	27.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1041.6	1042.0	3.0	25.0			QL=6 ST=3 TYP=3
	8800	ATHN	47	GB	1041.6	1042.1	4.9	110.0			QL=6 ST=3 TYP=5
	2800	OTTA	20	GRF	1145.0	1150.0	65.0	16.0	6.0		
	8400	BERN	21	GRF	1230.0	1230.9	30.0	36.0			
	2800	OTTA	240	AR	1310.0	1335.0	25.0	16.0	8.0		
	2695	ATHN	4	S/F	1312.3	1316.6	8.0	23.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1315.0	1318.0	4.0	12.4	6.2		
	2695	SGMR	47	GB	1327.8	1329.6	16.8	42.0			QL=6 ST=2 TYP=5
	8800	SGMR	4	S/F	1328.3	1329.6	2.3	24.0			QL=6 ST=2 TYP=3
	2695	SGMR	20	GRF	1344.6	1346.6	14.0	50.0			QL=6 ST=2 TYP=2
	2800	OTTA	21	GRF	1415.0	1555.0	340.0	44.0	26.0		
	2800	OTTA	1	S	1420.0	1423.0	5.0	7.4	3.8		
	2800	OTTA	4	S/F	1430.0	1434.5	7.0	22.4	10.4		
	2695	SGMR	8	S	1433.8	1434.3	.5D	46.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1439.0		52.0	37.0	24.0		
	2695	SGMR	8	S	1442.3	1444.1	1.8D	44.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1454.5	1455.8	1.3	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1458.0	1500.0	11.0	32.0	14.0		
	2800	OTTA	1	S	1616.0	1616.5	1.0	4.4	2.2		
	2800	OTTA	22	GRF	1725.0	1735.0	55.0	19.0	11.0		
	8800	SGMR	20	GRF	1728.1	1752.5	57.7	53.0			QL=6 ST=2 TYP=2
	2800	OTTA	22	GRF	1830.0	1838.0	40.0	34.6	12.0		
	8800	PALE	47	GB	1833.8	1835.1	12.5	31.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1837.8	1838.1	6.2	50.0			QL=6 ST=2 TYP=5
	2695	PALE	4	S/F	1837.8	1838.6	4.0	21.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	1838.3	1838.6	8.8	32.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1931.0	1932.0	3.0	4.0	2.0		
	2800	OTTA	21	GRF	2025.0	2220.0	170.0	17.0	8.5		
	8800	PALE	47	GB	2046.0	2046.3	3.3	60.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
14	2800	OTTA	3	S	2046.0	2047.0	4.0	10.6	4.0		
	8800	SGMR	8	S	2046.1	2046.3	.4	24.0			QL=6 ST=2 TYP=3
	8800	SGMR	4	S/F	2159.3	2159.6	3.0	33.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	2159.5	2201.3	8.3	39.0			QL=6 ST=2 TYP=3
15	8800	LEAR	47	GB	0040.1	0053.3	17.2	62.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0129.1	0130.6	9.4	29.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0211.1	0211.1	2.9	35.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	0211.1	0211.1	.7	60.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0218.8	0224.1	56.2	36.0			QL=6 ST=3 TYP=5
	8800	LEAR	47	GB	0218.8	0224.3	56.2	180.0			QL=6 ST=3 TYP=5
	8800	LEAR	47	GB	0223.5	0224.0		180.0			QL=6 ST=3 TYP=5
	2695	LEAR	8	S	0223.5	0224.1		36.0			QL=6 ST=3 TYP=3
	2695	LEAR	8	S	0333.1	0333.3	1.9	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0333.3	0333.3	1.5	60.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0337.6	0338.3	3.7	18.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0337.8	0338.1	1.3	15.0			QL=6 ST=2 TYP=3
	8400	BERN	41	F	1055.0U	1113.3	20.0U	29.0			
	8800	ATHN	8	S	1113.1	1113.5	.7	33.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1227.0	1232.0	33.0	10.8	5.0		
	2695	SGMR	47	GB	1227.8	1230.1	4.7	80.0			QL=2 ST=2 TYP=5
	8800	ATHN	4	S/F	1229.1	1235.1	26.0	29.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1326.5	1327.0	1.0	12.6	6.0		
	2800	OTTA	21	GRF	1420.0	1445.0	90.0	6.0	3.0		
	2800	OTTA	4	S/F	1526.0	1527.5	4.0	10.2	3.4		
	2695	ATHN	4	S/F	1526.1	1527.1	8.7	17.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1526.1	1527.6	3.0	40.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	1526.3	1527.6	3.5	35.0			QL=2 ST=2 TYP=3
	8800	SGMR	8	S	1526.8	1527.3	1.0	39.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1738.5	1739.0	2.0	9.8	3.3		
	2800	OTTA	1	S	1744.0	1744.3	3.0	8.4	2.2		
	2800	OTTA	23	GRF	2135.0	0045.0	260.0D	41.8			
	2800	OTTA	4	S/F	2205.2	2209.5	17.0	20.8	10.0		
	8800	PALE	47	GB	2205.5	2206.8	10.3	87.0			QL=5 ST=2 TYP=5
	8800	SGMR	47	GB	2205.6	2206.5	7.7	56.0			QL=6 ST=2 TYP=5
	2695	PALE	4	S/F	2209.6	2209.6	3.5	20.0			QL=5 ST=2 TYP=3
	2695	SGMR	8	S	2211.6	2213.1	1.7	30.0			QL=6 ST=2 TYP=3
16	8800	LEAR	47	GB	0023.6	0024.3	43.7	53.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0023.8	0026.1	41.5	13.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	0024.0	0024.3	21.6	46.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0304.8	0305.3	4.2	30.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0305.1	0305.6	1.5	41.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0321.1	0321.8	1.4	55.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0321.6	0322.3	1.7	79.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0324.0	0326.8	3.5	40.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	0324.6	0326.8	2.5	60.0			QL=6 ST=2 TYP=5
	8800	PALE	4	S/F	0327.1	0329.1	3.0	36.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0852.6	0853.3	12.5	19.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0854.1	0854.5	4.2	18.0			QL=6 ST=2 TYP=3
	8400	BERN	21	GRF	0858.0	0928.7	40.0	70.0			
	8800	ATHN	20	GRF	0859.8	0902.0	10.2	22.0			QL=6 ST=2 TYP=2
	8800	LEAR	4	S/F	0900.6	0901.0	2.5	29.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0928.1	0928.6	2.5	110.0			QL=5 ST=2 TYP=5
	2800	OTTA	240	AR	1222.0	1228.0	6.0	6.4	3.2		
	8800	SGMR	4	S/F	1222.1	1223.1	2.5	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1222.5	1223.0	3.5	37.0	10.8		
	2695	SGMR	47	GB	1222.6	1223.1	.7	60.0			QL=2 ST=2 TYP=5
	2800	OTTA	21	GRF	1242.0	1255.0	60.0	13.6	4.8		
	8400	BERN	3	S	1244.0	1245.9	45.0	298.0			
	2695	ATHN	4	S/F	1244.5	1245.8	7.0	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1244.5	1245.8	8.6	239.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1244.6	1245.8	14.2	300.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1245.0	1246.0	4.0	17.6	8.0		
	2800	OTTA	21	GRF	1410.0	1500.0	250.0	13.6	6.8		
	2695	ATHN	4	S/F	1456.0	1505.6	19.3	10.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1456.0	1505.6	21.6	22.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1515.0	1522.3	7.3D	165.0			
	8800	ATHN	47	GB	1519.8	1521.6	20.5	130.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1520.5	1521.6	21.6	27.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
16	8800	SGMR	47	GB	1521.5	1522.0	4.0	160.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1521.5	1522.2	6.0	30.0	14.8		
	2695	SGMR	8	S	1522.1	1522.8	2.0	41.0			QL=2 ST=2 TYP=3
	8400	BERN	4	S/F	1617.0	1617.4	2.0	78.0			
	2800	OTTA	3	S	1617.0	1617.4	3.0	35.0	9.0		
	8800	SGMR	47	GB	1617.1	1617.3	1.2	84.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1617.1	1617.6	2.0	72.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1617.1	1617.6	2.4	30.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1617.3	1617.5	1.0	50.0			QL=6 ST=2 TYP=3
	2800	OTTA	40	F	1621.7	1623.0	5.0	10.0			
	2800	OTTA	21	GRF	1830.0	1920.0	150.0	16.2	8.1		
	8800	SGMR	47	GB	1850.8	1855.1	23.0	50.0			QL=6 ST=2 TYP=5
	8800	SGMR	8	S	1926.0	1926.1	.1	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	2023.0	2023.2	1.0	4.8	1.8		
	2800	OTTA	45	C	2115.0	2144.5	29.5D	27.0	6.4		
	8800	PALE	4	S/F	2138.0	2138.5	2.6	40.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	2144.3	2144.6	.7	40.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2144.6	2144.8	1.5	39.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	2144.6	2144.8	.2	30.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	2144.6	2145.0	1.2	22.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	2305.8	2307.1	11.3	27.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	2310.0	2310.3	1.8	77.0			QL=4 ST=2 TYP=5
	2695	PENT	240	R	2310.0	2345.0	35.0	10.0	4.0		
	2695	SGMR	4	S/F	2313.0	2315.1	4.0	49.0			QL=4 ST=2 TYP=3
	8800	PALE	4	S/F	2326.8	2328.0	5.2	27.0			QL=6 ST=2 TYP=3
	2695	PENT	46F	C	2351.5	2354.3	5.5	170.0	48.0		
	2695	LEAR	47	GB	2351.6	2354.5	5.5	160.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	2351.8	2354.5	8.5	420.0			QL=6 ST=2 TYP=5
	2695	PENT	29	PBI	2357.0	2357.0	28.0	9.6	3.2		
17	8800	LEAR	47	GB	0000.8	0001.6	4.5	63.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0001.3	0001.6	11.0	100.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0134.3	0135.1	3.5	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	20	GRF	0147.1	0148.3	4.5	31.0			QL=6 ST=2 TYP=2
	8800	LEAR	49	GB	0202.6	0202.8	21.9	11.0			QL=6 ST=2 TYP=7
	8800	PALE	49	GB	0203.5	0205.8	10.6	2600.0			QL=6 ST=2 TYP=7
	2695	PALE	49	GB	0203.6	0206.0	15.0	620.0			QL=6 ST=2 TYP=7
	2695	LEAR	49	GB	0203.6	0206.0	20.9	740.0			QL=6 ST=2 TYP=7
	2695	MANI	49	GB	0204.0	0206.5	27.5	4100.0			QL=6 ST=3 TYP=6
	8800	MANI	49	GB	0204.0	0206.5	16.0	2899.0			QL=6 ST=3 TYP=6
	8800	LEAR	4	S/F	0709.6	0711.1	5.0	18.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	1005.0	1005.8	1.3	28.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	1005.0	1005.8	1.3	7.0			QL=6 ST=2 TYP=3
	8800	ATHN	49	GB	1030.0	1033.6	73.3	1899.0			QL=6 ST=2 TYP=6
	2695	ATHN	49	GB	1030.1	1034.1	66.0	1000.0			QL=6 ST=2 TYP=6
	8800	SGMR	49	GB	1031.3	1033.6	23.8	1300.0			QL=6 ST=2 TYP=6
	2695	SGMR	49	GB	1031.6	1034.6	23.5	1199.0			QL=6 ST=2 TYP=6
	2695	SGMR	47	GB	1055.1	1055.3	9.7	89.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1055.1	1055.3	9.7	57.0			QL=6 ST=2 TYP=5
	2800	OTTA			1057.0E		33.0D	17.2			
	8800	SGMR	47	GB	1104.8	1105.6	10.7	62.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	1105.0	1107.5	10.5	39.0			QL=6 ST=2 TYP=3
	8800	SGMR	20	GRF	1115.5	1115.6	6.6	41.0			QL=6 ST=2 TYP=2
	2695	SGMR	20	GRF	1115.5	1117.1	11.0	44.0			QL=6 ST=2 TYP=2
	2800	OTTA	1	S	1137.0	1138.0	2.0	5.4	2.7		
	2800	OTTA	21	GRF	1240.0	1310.0	80.0	10.8	5.4		
	2695	ATHN	47	GB	1251.5	1253.6	34.0	59.0			QL=6 ST=2 TYP=5
	2800	OTTA	40	F	1251.6	1253.8	29.0	56.0			
	8800	ATHN	4	S/F	1252.3	1253.6	33.2	34.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1253.3	1253.8	.5	42.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1300.1	1300.6	.5	41.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1300.1	1300.6	.7	33.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1317.5	1317.6	.1	38.0			QL=6 ST=2 TYP=3
	2800	OTTA	260	FAL	1410.0	1600.0	110.0	-17.0	-10.0		
	2800	OTTA	21	GRF	1630.0	1755.0	100.0	6.2	3.1		
	2800	OTTA	3	S	1713.5	1714.5	2.5	11.2	5.0		
	2800	OTTA	1	S	1825.5	1826.2	8.5	7.0	3.0		
	2800	OTTA	20	GRF	1950.0	2000.0	75.0	5.6	2.8		
	2695	PENT	47	GB	2308.5	2316.0	25.5	785.0	88.0		
	2695	PALE	49	GB	2309.6	2311.0	14.5	88.0			QL=6 ST=2 TYP=7

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
17	8800	MANI	49	GB	2310.0	2316.1	18.0	1000.0			QL=6 ST=2 TYP=6
	2695	MANI	49	GB	2310.0	2316.3	22.0	750.0			QL=6 ST=2 TYP=6
	8800	PALE	49	GB	2310.3	2311.0	13.8	43.0			QL=6 ST=2 TYP=7
	2695	LEAR	47	GB	2320.0E	2322.0	10.6D	33.0			QL=5 ST=3 TYP=5
	8800	LEAR	47	GB	2320.0E	2322.0	10.6D	89.0			QL=5 ST=3 TYP=5
	2695	PENT	29	PBI	2334.0	2334.0	30.0	12.0	5.0		
18	2695	PENT	3	S	0050.0	0051.0	4.0	12.6	6.0		
	2695	LEAR	8	S	0051.6	0051.8	1.0	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0051.6	0051.8	1.7	19.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0157.5	0158.6	5.3	24.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0402.6	0403.1	2.4	16.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0605.3	0605.6	1.7	20.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	0605.3	0605.6	1.5	11.0			QL=6 ST=2 TYP=3
	2695	ATHN	8	S	0605.3	0605.8	1.3	7.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0605.5	0605.6	1.3	17.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0631.3	0632.6	2.2	17.0			QL=6 ST=3 TYP=3
	2695	LEAR	4	S/F	0631.5	0632.3	5.5	29.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	0913.0	0915.3	12.0	166.0			
	8800	ATHN	47	GB	0914.3	0915.3	7.8	150.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0914.5	0915.3	4.8	160.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	0914.8	0915.1	2.3	9.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1141.0	1143.0	6.0	13.6	6.0		
	8800	ATHN	4	S/F	1141.1	1142.8	7.9	11.0			QL=6 ST=2 TYP=3
	8800	SGMR	4	S/F	1142.3	1143.6	6.2	22.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1420.1	1420.3	.4	19.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1424.8	1424.8	.5	48.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1620.0	1658.0	100.0	5.6	2.8		
	2695	SGMR	8	S	1750.6	1751.1	.9	36.0			QL=6 ST=2 TYP=3
	2800	OTTA	260	FAL	1801.0	1841.0	40.0	-7.4	-3.7		
	2800	OTTA	20	GRF	1930.0	2005.0	130.0	4.0	2.8		
	2800	OTTA	21	GRF	2145.0	2225.0	145.0	4.6	3.0		
	2800	OTTA	8	S	2224.5	2224.5	.1	10.8			
19	2695	PENT	3	S	0038.8	0039.1	2.0	18.8	6.8		
	2695	PENT	46F	C	0041.0	0056.2	35.0	213.0	55.0		
	2695	MANI	47	GB	0041.5	0056.1	33.0	96.0			QL=6 ST=2 TYP=5
	8800	MANI	47	GB	0043.0	0101.3	30.5	460.0			QL=6 ST=2 TYP=5
	2695	PENT	29	PBI	0116.0	0116.0	35.0	13.6	6.8		
	8400	BERN	21	GRF	0540.0U	0544.4	140.0U	128.0			
	8800	SGMR	8	S	1030.6	1031.3	1.2	29.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1031.8	1033.0	1.2D	18.0			QL=6 ST=2 TYP=3
	8800	SGMR	4	S/F	1055.3	1057.3	11.5	28.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1101.6	1103.8	2.2D	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	240	R	1200.0	1215.0	15.0	5.8	2.9		
	2800	OTTA	1	S	1447.0	1447.6	3.0	8.0	2.7		
	2800	OTTA	21	GRF	1510.0	1550.0	80.0	6.8	3.4		
	2800	OTTA	40	F	1534.5	1542.2	11.0	9.0			
	2800	OTTA	3	S	1609.0	1610.0	5.0	22.4	5.6		
	2800	OTTA	22	GRF	1805.0	1811.0	85.0	8.8	4.4		
	8800	SGMR	20	GRF	1829.3	1831.3	2.0D	19.0			QL=6 ST=2 TYP=2
	2695	SGMR	4	S/F	1846.3	1849.6	10.0	36.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1848.3	1848.6	.3	28.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1955.0	2015.0	80.0	4.2	1.8		
	2800	OTTA	45	C	2014.2	2015.0	8.0	11.6	3.9		
	2800	OTTA	21	GRF	2205.0	2310.0	175.0	21.4	11.0		
	2800	OTTA	4	S/F	2207.5	2209.0	14.0	17.8	7.4		
	8800	SGMR	4	S/F	2208.6	2209.1	4.0	47.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	2306.8	2307.3	1.8	54.0			QL=6 ST=3 TYP=5
	2695	SGMR	4	S/F	2307.0	2309.1	2.1	28.0			QL=6 ST=2 TYP=3
20	8800	LEAR	8	S	0039.0	0039.1	.6	36.0			QL=6 ST=2 TYP=3
	2695	PALE	8	S	0039.1	0039.1	1.2	20.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0039.1	0039.1	1.2	18.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0039.1	0039.3	.4	30.0			QL=6 ST=2 TYP=3
	2695	PENT	21	GRF	0141.0	0144.5	14.0	9.0	4.5		
	8800	LEAR	4	S/F	0152.0	0152.6	2.1	40.0			QL=6 ST=2 TYP=3
	2695	PENT	1	S	0152.0	0152.7	1.5	9.8	3.8		
	2695	LEAR	8	S	0152.5	0152.6	1.1	19.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0152.5	0152.6	1.1	38.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
20	8800	PALE	47	GB	0203.1	0203.3	1.5	83.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0203.1	0203.3	.9	79.0			QL=6 ST=2 TYP=5
	2695	LEAR	8	S	0203.1	0203.3	.4	18.0			QL=6 ST=2 TYP=3
	8800	PALE	4	S/F	0208.6	0209.6	2.2	32.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0214.5	0214.6	1.8	23.0			QL=6 ST=2 TYP=3
	8800	LEAR	49	GB	0412.0E	0413.6	19.5D	37.0			QL=5 ST=2 TYP=6
	2695	LEAR	47	GB	0412.0E	0418.0	6.8D	60.0			QL=5 ST=2 TYP=5
	8800	PALE	47	GB	0412.3	0413.3	2.2	100.0			QL=6 ST=2 TYP=5
	8800	PALE	49	GB	0416.1	0417.8	4.2	540.0			QL=6 ST=2 TYP=6
	2695	PALE	8	S	0417.3	0417.8	2.0	41.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0439.8	0440.6	5.5	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0439.8	0441.0	4.0	40.0			QL=6 ST=2 TYP=3
	2800	OTTA	26A	FAL	1100.0E	1735.0	395.0D	-27.6	-13.8		
	2800	OTTA	21	GRF	1120.0	1205.0	120.0	18.4	13.0		
	2800	OTTA	22	GRF	1139.0	1146.0	21.0	19.0	9.5		
	2695	ATHN	4	S/F	1139.1	1146.3	22.7	29.0			QL=6 ST=2 TYP=3
	8800	ATHN	49	GB	1251.6	1252.5	6.0	520.0			QL=6 ST=2 TYP=6
	2695	ATHN	47	GB	1251.6	1252.5	6.9	88.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1252.0	1252.5	3.5	102.0	25.6		
	8400	BERN	47	GB	1252.0	1252.8	1.0	542.0			
	8800	SGMR	47	GB	1252.3	1252.8	.8	390.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1252.5	1252.6	.6	87.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	1524.0	1524.5	6.0	9.0	4.0		
	2800	OTTA	21	GRF	2105.0	2240.0	240.0	7.0	4.4		
	2800	OTTA	4	S/F	2153.0	2155.2	10.0	117.0	20.0		
	8800	PALE	47	GB	2154.1	2155.3	5.2	100.0			QL=6 ST=2 TYP=5
	2695	PALE	47	GB	2154.1	2155.3	4.2	52.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	2154.1	2155.5	4.4	80.0			QL=3 ST=2 TYP=5
	2695	SGMR	47	GB	2155.1	2155.3	1.2	58.0			QL=2 ST=2 TYP=5
	2695	PENT	4	S/F	2308.5	2310.3	4.0	32.8	13.6		
	2695	PALE	4	S/F	2309.3	2310.5	2.7	37.0			QL=6 ST=2 TYP=3
	2695	MANI	20	GRF	2309.5	2310.8	3.5	25.0			QL=6 ST=2 TYP=2
	2695	PENT	2	S/F	2322.0	2323.0	2.0	4.2	2.1		
21	2695	LEAR	8	S	0115.3	0115.5	.2	13.0			QL=6 ST=2 TYP=3
	2695	PENT	3	S	0125.0	0125.4	2.0	14.2	5.0		
	2695	LEAR	4	S/F	0417.8	0419.0	3.7	22.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	1100.3	1100.5	.3	40.0			QL=6 ST=3 TYP=3
	2800	OTTA	260	FAL	1120.0	1320.0	120.0	-9.6	-4.8		
	2800	OTTA	1	S	1618.0	1618.5	1.0	4.4	2.2		
	2800	OTTA	40	F	1640.0	1640.9	7.0	11.0			
	2800	OTTA	21	GRF	1640.0	1720.0	135.0	13.2	6.6		
	2695	ATHN	8	S	1644.8	1645.3	1.5	7.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1714.0	1715.1	4.0	51.0	12.8		
	2695	ATHN	8	S	1714.1	1715.1	1.7	45.0			QL=5 ST=2 TYP=3
	2695	SGMR	47	GB	1714.6	1715.1	.7	51.0			QL=6 ST=2 TYP=5
	2800	OTTA	45	C	1817.0	1821.2	10.0	44.0	16.6		
	8800	SGMR	47	GB	1817.5	1818.0	5.6	70.0			QL=6 ST=2 TYP=5
	2695	SGMR	8	S	1818.0	1819.0	1.0D	39.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	1821.0	1821.5	4.6	200.0			QL=6 ST=2 TYP=5
	2695	PALE	4	S/F	1821.0	1821.5	4.6	47.0			QL=6 ST=2 TYP=3
	2800	OTTA	29	PBI	1827.0	1827.0	20.0	6.0	2.8		
	2800	OTTA	1	S	1947.2	1947.5	1.0	4.4	1.6		
22	2695	PENT	29	PBI	0001.0	0001.0	35.0	7.0	3.0		
	2695	LEAR	8	S	0015.6	0015.8	.2	28.0			QL=6 ST=2 TYP=3
	2695	PENT	3	S	0015.6	0015.9	2.0	21.6	5.4		
	2695	PENT	20	GRF	0038.0	0042.0	25.0	3.6	1.6		
	8400	BERN	3	S	0512.0	0512.8	2.0	190.0			
	8800	LEAR	47	GB	0512.3	0512.8	1.3	189.0			QL=6 ST=2 TYP=5
	2695	MANI	4	S/F	0512.3	0513.5	2.7	20.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0512.5	0513.0	.6	20.0			QL=6 ST=2 TYP=3
	8800	MANI	47	GB	0512.5	0513.5	2.0	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	21	GRF	1625.0	1755.0	575.0D	46.0			
	2800	OTTA	46F	C	1645.5	1700.0	65.0	410.0	93.0		
	2695	PALE	47	GB	1650.1	1650.5	8.5	100.0			QL=6 ST=2 TYP=5
	8800	PALE	4	S/F	1651.1	1652.1	7.5	20.0			QL=6 ST=2 TYP=3
	2695	SGMR	47	GB	1657.1E	1659.6	18.0D	380.0			QL=3 ST=2 TYP=5
	8800	SGMR	4	S/F	1658.5E	1700.1	10.3D	44.0			QL=3 ST=2 TYP=3
	2695	PALE	47	GB	1658.6	1658.8	16.2	320.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

JULY 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
22	8800	PALE	49 GB	1658.6	1658.8	16.2	73.0			QL=6 ST=2 TYP=6
	2695	SGMR	47 GB	1718.3	1720.3	9.0	100.0			QL=6 ST=2 TYP=5
	2695	PALE	47 GB	1718.5	1719.6	9.8	98.0			QL=6 ST=2 TYP=5
	8800	PALE	4 S/F	1718.8	1721.3	11.5	34.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1720.1	1720.6	.5D	31.0			QL=6 ST=2 TYP=3
	2695	PENT	46F C	2353.0	2357.5	8.0	48.6	19.0		
23	2695	LEAR	8 S	0613.6	0614.0	1.0	7.0			QL=6 ST=2 TYP=3
	2800	OTTA	1 S	1504.0	1504.7	1.0	3.6	1.4		
24	2695	PENT	20 GRF	0115.0	0117.0	11.0	2.6	1.3		
	2800	OTTA	1 S	1717.5	1718.0	3.0	1.8	0.9		
	2800	OTTA	20 GRF	2025.0	2100.0	120.0	2.8	1.4		
25	2800	OTTA	20 GRF	1100.0E	1310.0	320.0D	4.8			
28	2800	OTTA	20 GRF	1100.0E	1220.0	335.0D	6.0			
29	8800	LEAR	8 S	2358.1	2358.6	1.2	6.0			QL=6 ST=2 TYP=3
30	2800	OTTA	240AR	1120.0	1350.0	150.0	8.2	4.1		
	2800	OTTA	8 S	1327.0	1327.2	.5	2.8			
	2800	OTTA	1 S	1455.0	1456.5	3.0	2.2	1.0		
31	2800	OTTA	20 GRF	1435.0	1440.0	25.0	2.0	1.0		
	2800	OTTA	240 R	1810.0	1830.0	20.0	3.0	1.5		
	2800	OTTA	20 GRF	2140.0	2145.0	25.0	3.6	1.5		

Observatories:

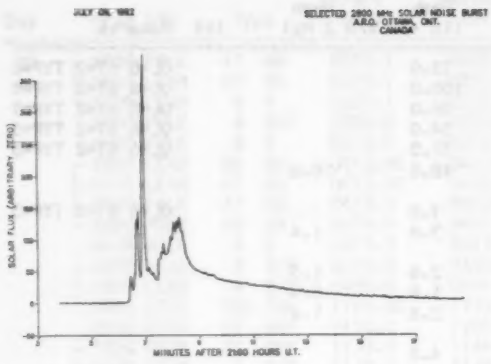
BERN = Berne MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill
LEAR = Learmonth ATHN = Athens PALE = Palehua

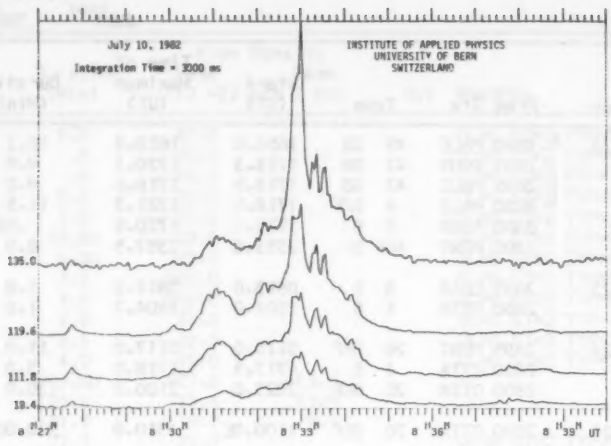
Explanation of Type Code:

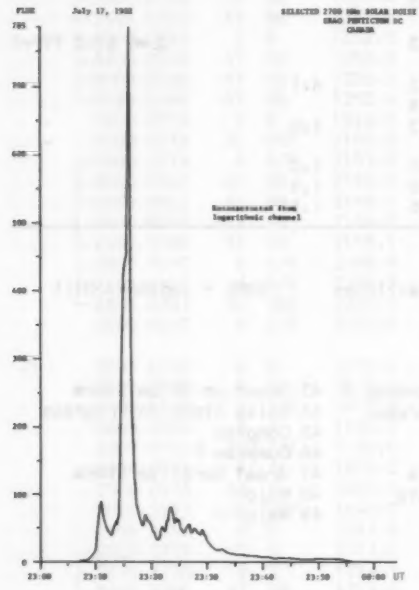
1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset on Noise Storm
44 Noise Storm In Progress
45 Complex
46 Complex F
47 Great Burstise Storm
48 Major
49 Major +

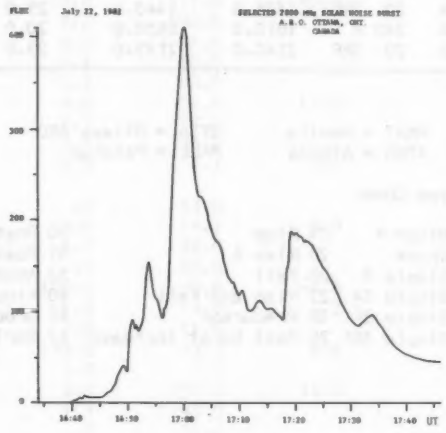
SELECTED SOLAR NOISE BURSTS

JULY 9-22, 1982









PIONEER XII
Solar Wind
JULY 1982

DATE Jul '82	TIME (UT)	ESV (°)	U_{H+} (km/s)	N_{H+} (H^+/cc)	T_{H+} (x10^6 K)
1	0601	099.	469.	18.7	0.427
2	0840		628.	5.8	.552
3	0344		575.	9.9	.242
4	1227		584.	10.7	.522
5	2223		596.	11.9	.6
6	0348		654.	6.4	.124
7	2223		597.	7.9	.452
8	0219		653.	9.3	.232
9	2126		408.	25.6	.198
10	0532		468.	33.3	.25
11	0623		341.	83.6	.107
12	0454		294.	80.3	.035
13	2101		534.	12.7	.548
14	0746		493.	34.	.433
15	0857	108.	458.	21.9	.338
16	0711		477.	18.4	.318
17	1322		328.	17.8	.069
18	0316		369.	43.6	.032
19	0807		513.	15.8	.306
20	0246		447.	26.2	.072
21	0539		618.	42.7	.247
22	0443		465.	53.7	.117
23	1654		328.	8.8	.009
24	0402		727.	1.6	.18
25	0546		519.	6.3	.079
26	0653		484.	19.5	.356
27	2127		471.	14.5	.44
28	1655		510.	8.9	.405
29	0553		551.	8.4	.123
30	1540		392.	23.6	.087
31	1422		556.	13.2	.297

INFERRED IP MAGNETIC FIELD

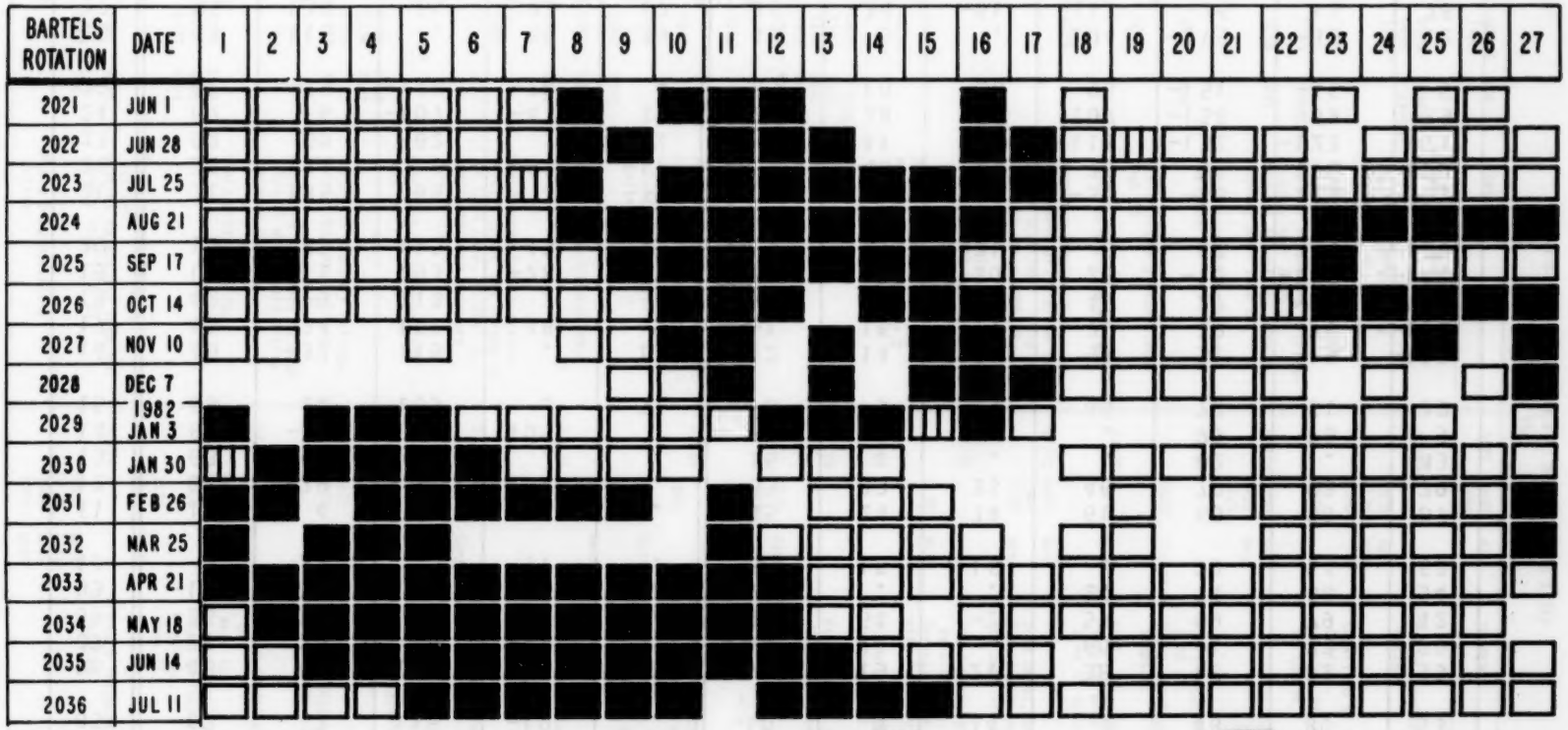
BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2016	1981 JAN 22	TA -			AT	T*			-	AT	TA				TA					-				AT			TA
2017	FEB 18			AT	TA									TA	TA		*							AT		TA		TA
2018	MAR 17							AT						-					TA				AT	-	-		TA	AT
2019	APR 13	TA		-	-	-					-				TA				*	AT	-		-		AT		-	-
2020	MAY 10	- -	-	-	-	TA	AT	TA			TA		TA									*	*					
2021	JUN 6		*								AT				TA			AT		-	-	-	-	-	-	-	-	-
2022	JUL 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2023	JUL 30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TA	-	TA	-	-	-	-	AT	-	-
2024	AUG 26	- -	-	-	TA	-	TA	-	-	TA	-	-	-	-	-	TA	-	TA	-	-	-	-	TA	-	-	-	-	-
2025	SEP 22	-	-	-	-	-	-	-	AT	-	TA	-	-	TA	-	TA	-	TA	-	AT	-	TA	-	TA	-	TA	-	TA
2026	OCT 19	AT -	TA	-	TA	-	-	-	TA	-	TA	-	-	-	-	-	TA	-	-	-	-	-	AT	-	TA	-	-	-
2027	NOV 15	-	-	-	AT	-	AT	-	-	-	AT	-	-	-	-	-	TA	-	TA	-	AT	-	-	-	-	-	AT	-
2028	DEC 12	TA -	-	-	-	-	AT	-	AT	-	-	-	-	-	-	-	-	AT	-	AT	-	TA	-	-	-	-	-	-
2029	1982 JAN 8	-	-	-	-	-	TA	-	TA	-	-	-	-	-	TA	-	-	TA	-	-	-	AT	-	-	-	-	-	-
2030	FEB 4	-	-	-	TA	-	TA	-	TA	-	TA	-	-	-	-	-	TA	-	-	-	-	-	-	-	TA	-	-	TA
2031	MAR 3	-	-	-	-	-	TA	-	TA	-	TA	-	TA	-	-	TA	-	-	-	TA	-	-	-	-	-	-	-	AT
2032	MAR 30	-	TA	-	TA	-	-	-	-	-	-	TA	-	-	-	-	-	AT	TA	-	TA	-	-	-	-	-	-	-
2033	APR 26	- -	AT	-	-	-	-	-	TA	-	TA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	AT	-	AT	-
2034	MAY 23	-	-	-	AT	-	-	-	TA	-	-	-	AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	TA
2035	JUN 19	-	-	-	-	-	-	-	-	-	-	-	-	TA	-	-	-	-	-	-	-	-	-	TA	-	-	-	-
2036	JUL 16	-	-	-	-	-	TA	-	-	-	-	AT	-	-	-	AT	-	-	-	-	-	-	-	-	-	-	-	-

[ ] = definitely towards the sun [ ] = definitely away from the sun

T = towards the sun A = away from the sun * = effect doubtful or not discernible - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

STANFORD MEAN SOLAR MAGNETIC FIELD



POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: □ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT

No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

	1981					1982						
day	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY	JUNE	JULY
01	-49	-134	-27	94	41	15	-20	-19	.	-6	.	.
02	.	-87	11	82	34	-6	-44	-9	.	-6	33	85
03	-72	-56	70	55	49	-17	-29	-20	.	23	38	75
04	-80	-21	104	-1	-3	.	-3	-39	-17	43	54	71
05	-67	-7	115	-19	.	-10	9	-44	3	48	80	53
06	-48	11	104	-36	-12	-5	19	-21	38	16	82	35
07	-33	26	28	-29	.	-4	43	.	60	41	77	29
08	-26	30	25	-23	.	25	64	-2	57	69	79	42
09	-19	33	-7	-16	.	23	.	.	24	74	68	54
10	-7	32	.	11	.	36	15	16	.	70	54	63
11	16	4	8	34	.	45	24	34	61	65	50	87
12	58	-29	32	.	.	35	33	35	46	79	58	79
13	68	-47	43	.	.	16	.	.	.	82	.	43
14	81	-37	64	105	.	-7	.	.	.	77	78	9
15	68	-24	103	.	57	-6	.	.	86	72	51	-39
16	49	-32	115	.	17	-12	14	21	93	51	-13	-112
17	49	-24	167	48	-5	-1	16	.	71	38	-51	-164
18	42	-8	218	3	.	-3	5	4	46	27	-93	-193
19	16	11	193	-28	-37	33	15	20	28	-15	-184	-201
20	12	85	115	-45	.	.	27	31	-6	-57	-237	-189
21	31	135	65	.	-39	.	38	25	-38	-68	-225	.
22	38	124	9	-65	-11	.	48	22	-78	-93	-170	-128
23	52	60	-62	.	-2	9	41	14	-113	-132	-123	-71
24	67	6	-107	-43	35	25	28	-2	-107	-158	-69	-29
25	92	-79	-128	-20	4	35	10	-26	-93	-151	-56	-5
26	64	-115	.	58	39	42	-3	.	-104	-118	-39	12
27	15	-138	-61	83	17	36	-34	-61	-117	-26	11	28
28	-12	-144	-60	96	29	.	.	-56	-122	-26	37	38
29	-64	-121	-19	59	.	15		-53	-77	-10	46	48
30	-34	-75	67	55	24	0		.	-26	19	59	61
31	-143		87		.	-10		.		46		53

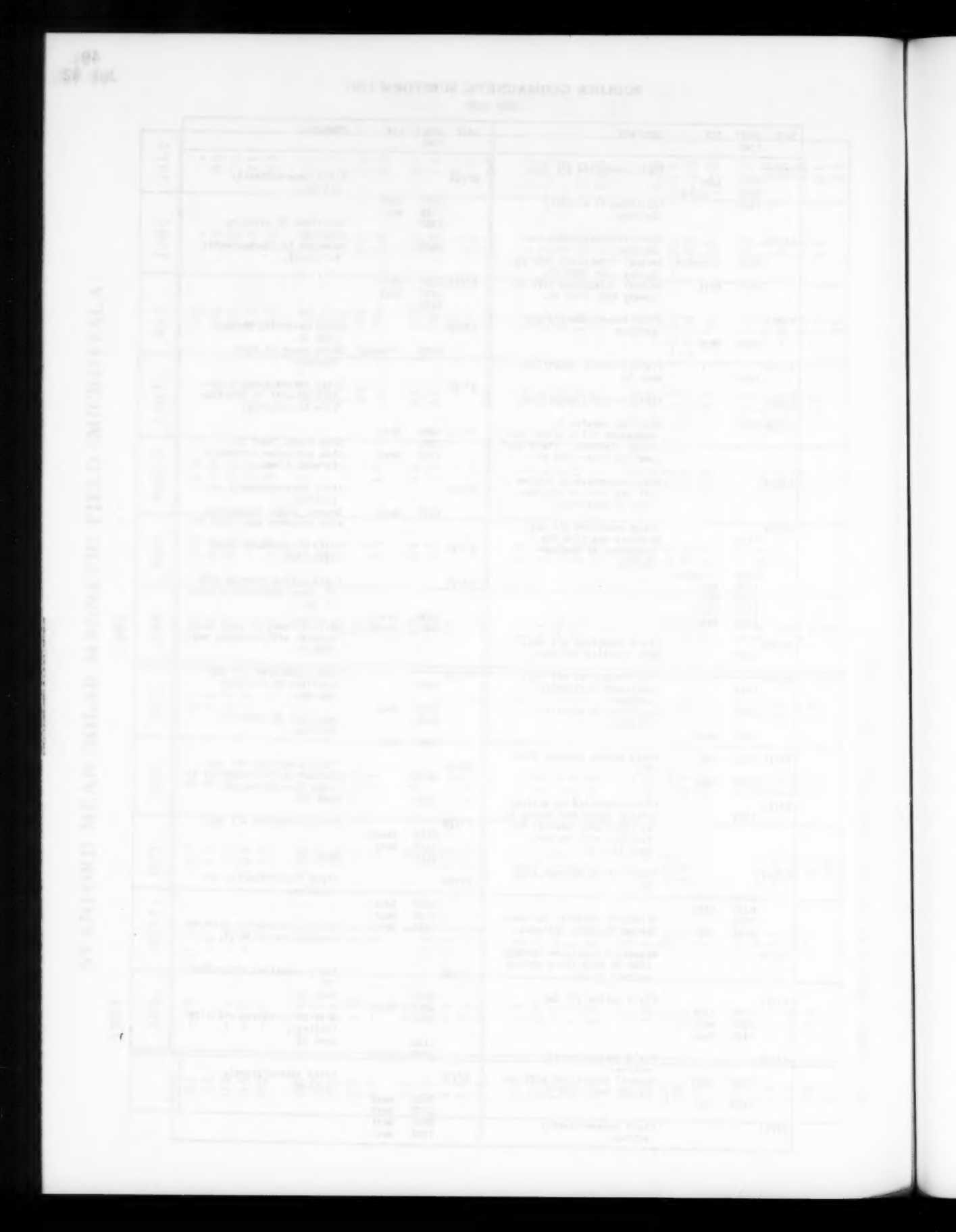
DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

BOULDER GEOMAGNETIC SUBSTORM LOG

JULY 1982

DATE	ONSET TIME	DIR	COMMENTS
07/01			Field unsettled all day.
	0350	East	
	0600	≈ center	
	1200		Localized SS vicinity College.
07/02			Field intermittently unsettled.
	0525	≈ center	Several injections with recovery near 0830 UT.
	1055	West	Several injections with recovery near 1330 UT.
07/03			Field intermittently unsettled.
	0920	West	
07/04			Field slightly unsettled.
	1000		Weak SS
07/05			Field slightly unsettled.
07/06	0045		Negative impulse H-component all mid/low latitude stations. Field unsettled after 0900 UT.
07/07			Field unsettled to active all day with no distinctive SS activity.
07/08			Field unsettled all day.
	0420		Moderate positive Bay D component at Boulder-Tucson.
	0810	≈ center	
	1110	West	
	1150	West	
	1610	West	
	1635	West	
07/09			Field unsettled all day.
	1140		Weak vicinity College.
07/10			Field unsettled all day.
	1015		Localized SS vicinity College.
	1055		Localized SS vicinity College.
	1200	West	
07/11	0953	SSC	Field active through 2000 UT.
	1740	West	
07/12			Field unsettled to active.
	1305		Initial onset and strong SS at Lynn Lake. Several injections with recovery near 1615 UT.
07/13			Field active through 1600 UT.
	0120	East	
	0325	East	
	0955		Strong SS vicinity College.
	1617	SSC	Strong magstorm follows.
07/14			Magsstorm continues through 1800 UT with field active balance of day.
07/15			Field active all day.
	0120	East	
	0615	West	
	1420	West	
07/16			Field intermittently active.
	1840	West	Several injections with recovery near 1100 UT.
	1519	SSC	
07/17			Field intermittently active.
07/18			Field intermittently active.
	0810	West	
	1125	West	
	1350		Localized SS vicinity College.
	1620		Moderate SS, Norman Wells to Inuvik.
07/19	1220	West	
	1420	West	
	2125		
07/20			Field unsettled through 1300 UT.
	0625	≈ center	Sharp onset at Fort Simpson.
07/21			Field intermittently unsettled with no distinctive SS activity.
07/22	0805	West	
	1245		Slow onset, weak SS.
	1400	West	Slow expansion northward through Alaska.
07/23			Field intermittently unsettled.
	1120	West	Several minor injections with recovery near 1520 UT.
07/24			Field at magstorm level 0200-1930 UT.
07/25			Field active through 1200 UT, then unsettled balance of day.
	0330	East	
	0655	Center	Initial onset at Lynn Lake, several with recovery near 0800 UT.
07/26			Field unsettled all day.
	0845		Localized SS vicinity College.
	0900	West	
	1300		Localized SS vicinity College.
	1500	West	
07/27			Field unsettled all day.
	0450		Boulder still in partial ring current sector.
	1530		Weak SS.
07/28			Field unsettled all day.
	0615	Center	
	1110	West	
	1445		Weak SS
07/29			Field intermittently unsettled.
	0610	East	
	1120	West	
	1330	West	Several injections with recovery near 1630 UT.
07/30			Field unsettled after 0500 UT
	0620		Weak SS
	0810	West	
	1030		Weak SS localized vicinity College.
	1130		Weak SS
	1630	West	
07/31			Field intermittently active.
	0605	West	
	0720	West	
	0945	West	
	1050	West	

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.



JUNE 1982 DATA

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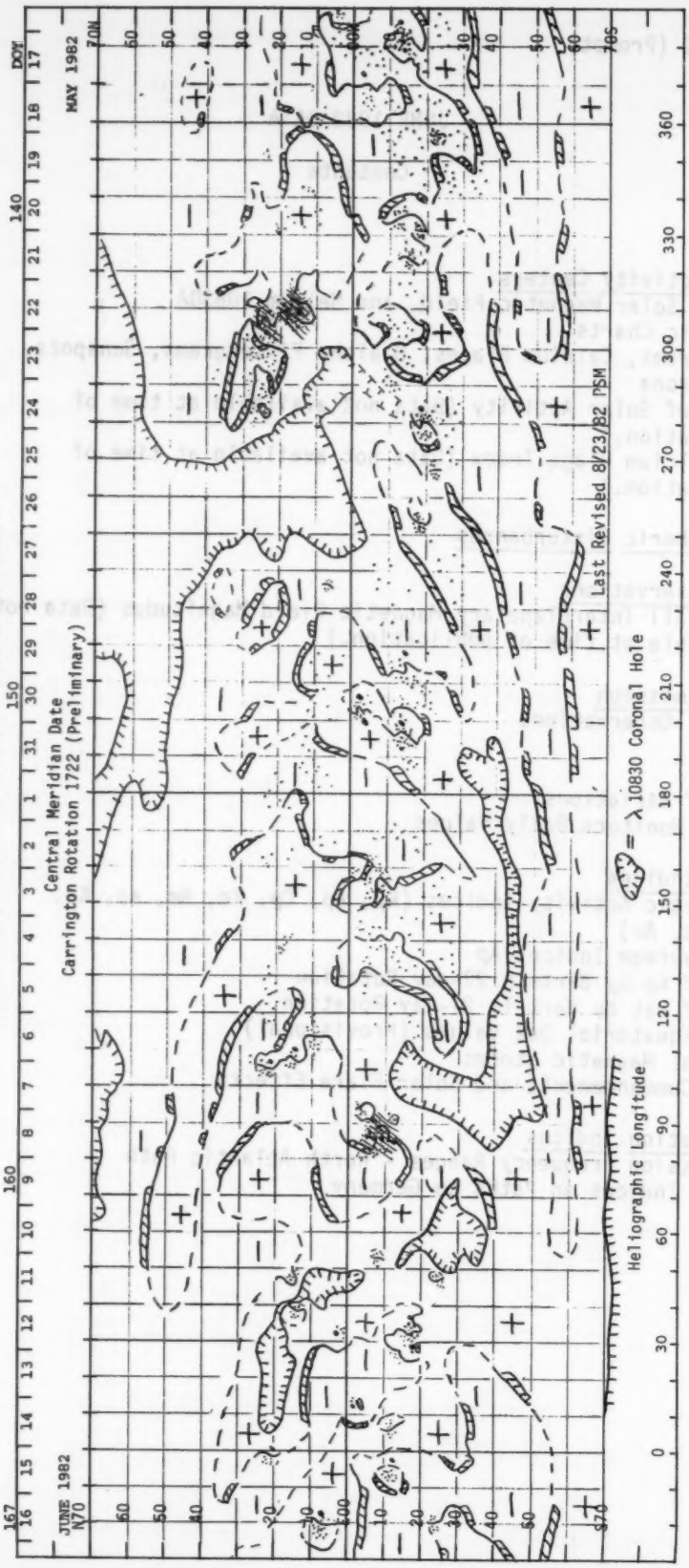
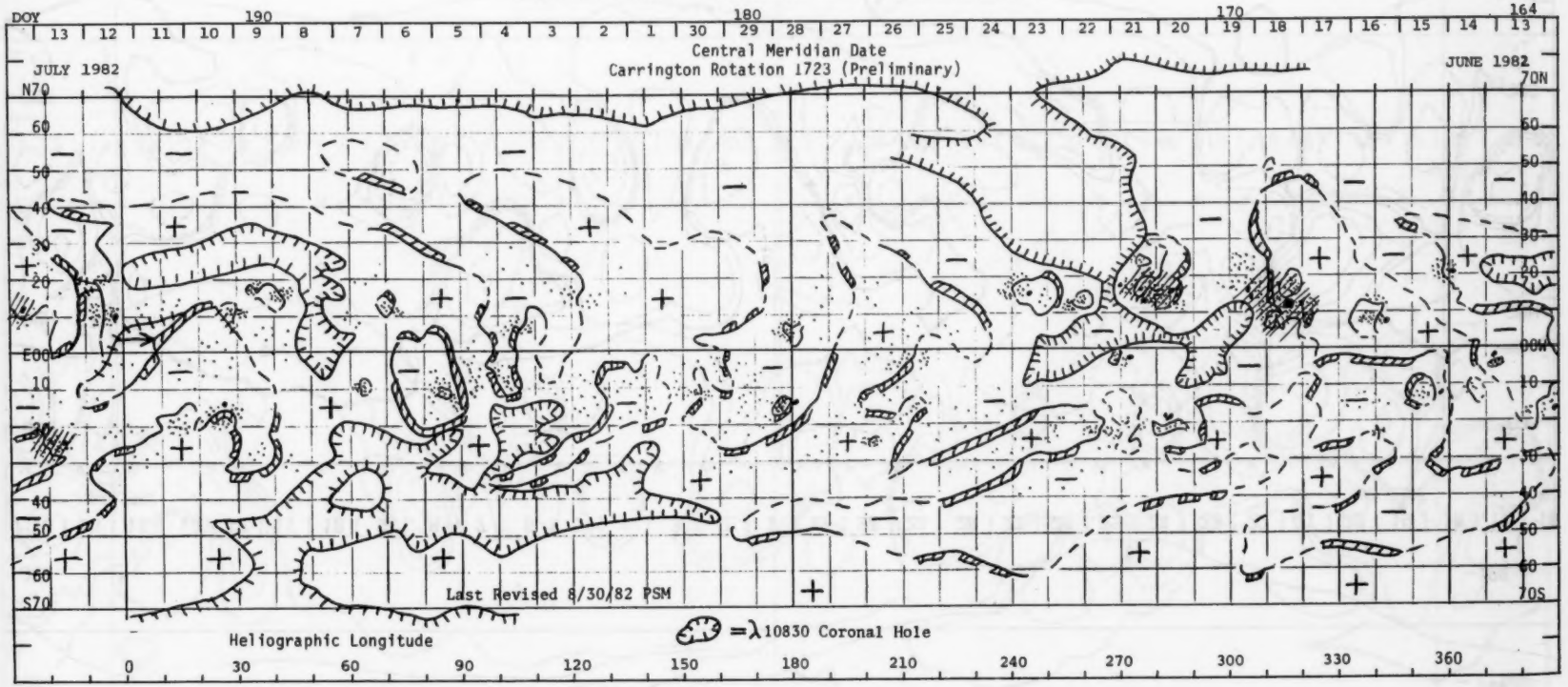

Hα SYNOPTIC CHART
CARRINGTON ROTATION 1722 (PRELIMINARY)
Central Meridian Date
Carrington Rotation 1722 (Preliminary)
MAY 1982
DOM
JUNE 1982
Heliographic Longitude
Last Revised 8/23/82 MSM
= λ 10830 Coronal Hole

Hα SYNOPTIC CHART

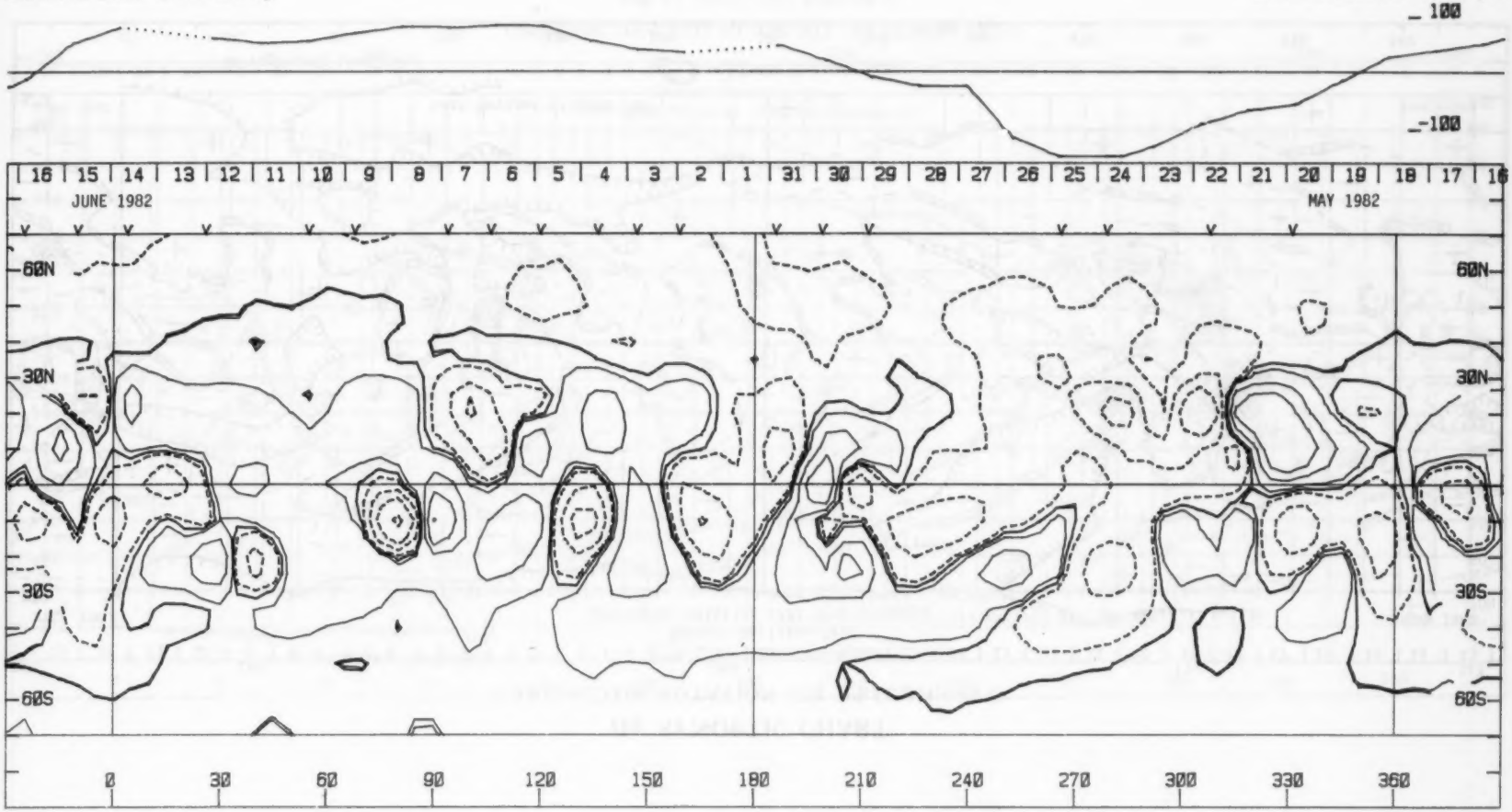
CARRINGTON ROTATION 1723 (PRELIMINARY)



SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION 1722

Stanford Solar Observatory

0, ±100, 200, 500... μT

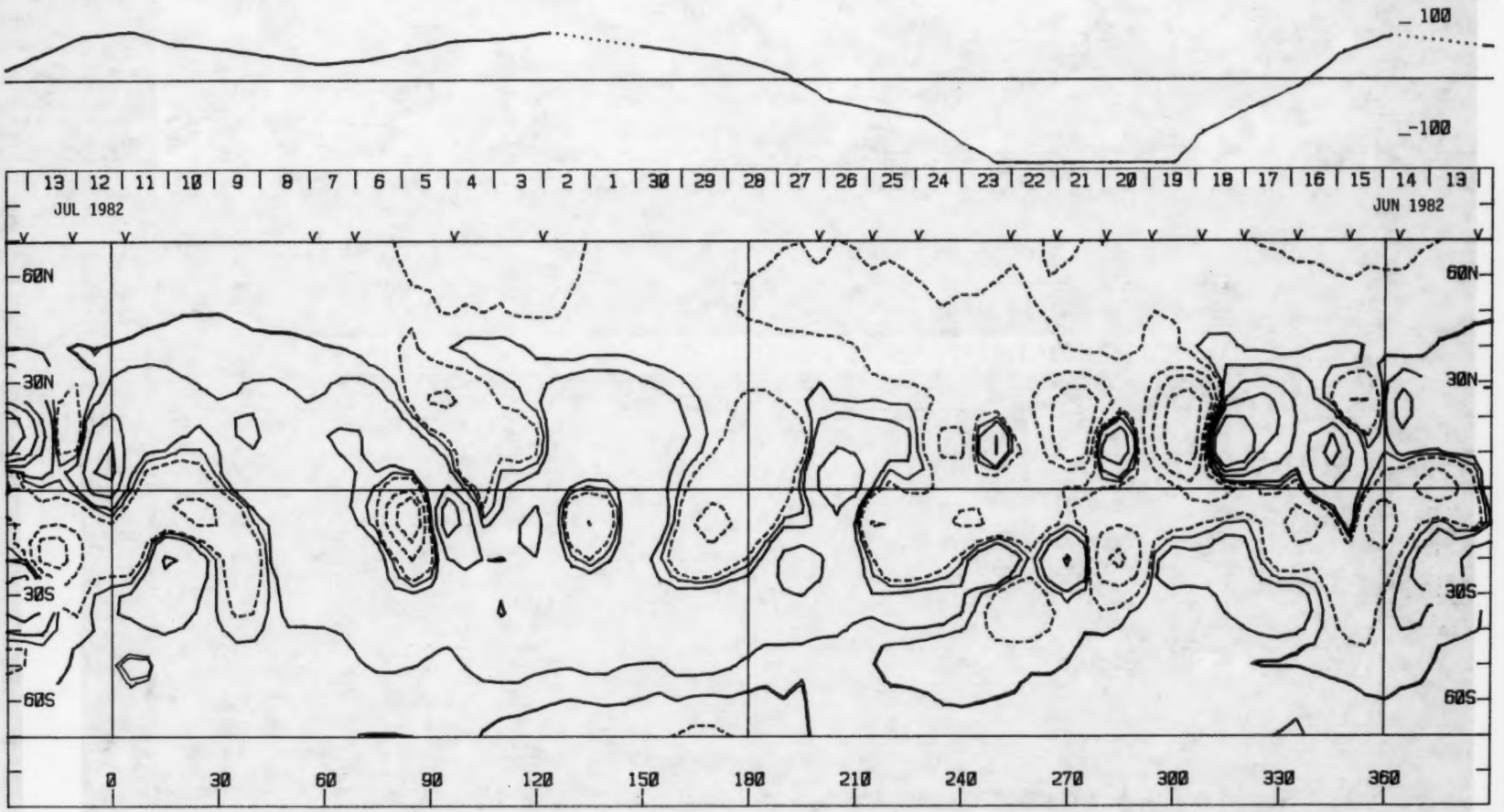


SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1723

Stanford Solar Observatory

0,±100,200,500... μT



55
Jun 82

KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

HELIUM 10830Å SYNOPTIC MAPS
CARRINGTON ROTATION 1723

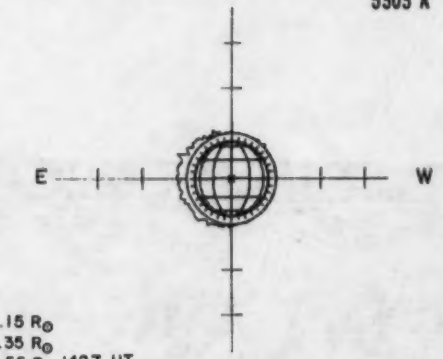
KITT PEAK NATIONAL OBSERVATORY

JUNE 1, 1982 (P=-15.58, B_o=-0.67, L_o=185.21)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$ 1427 UT

Sp

Np

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

NO DATA JUNE 1, 30

E

W

Sp

MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid-Plus
Dotted-Minus

NO DATA JUNE 1, 4, 13, 14, 20, 24, 28, 29, 30

E

W

Sp

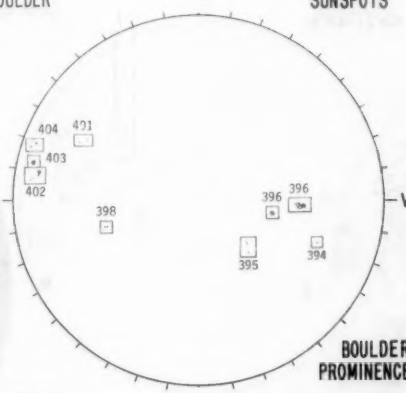
Levels
± 5
± 10
± 20
± 40
± 80

01

SACRAMENTO PEAK Np Hα

1435 UT

BOULDER Np SUNSPOTS

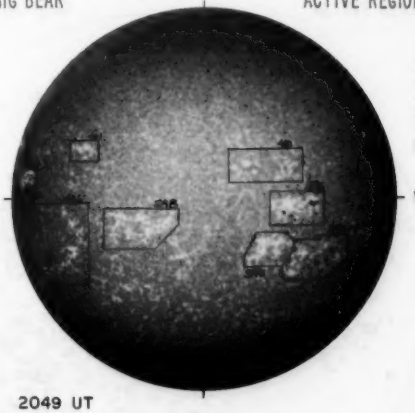


1600 UT

BOULDER PROMINENCES

NO DATA

BIG BEAR Np ACTIVE REGIONS



2049 UT

STANFORD Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

E NO DATA JUNE 1, 8, 11, 12, 21, 26, 28, 29, 30 W

Levels

0 μT

± 50

±100

±200

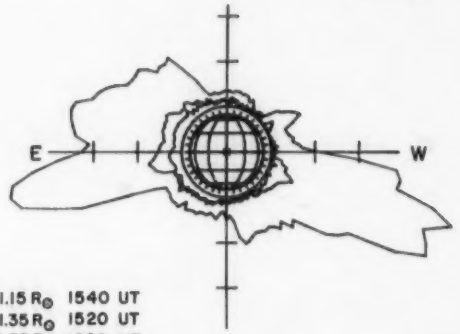
Sp

JUNE 2, 1982 (P=-15.21, B_o=-0.55, L_o=171.98)

SACRAMENTO PEAK

Np

CORONA
5303 Å



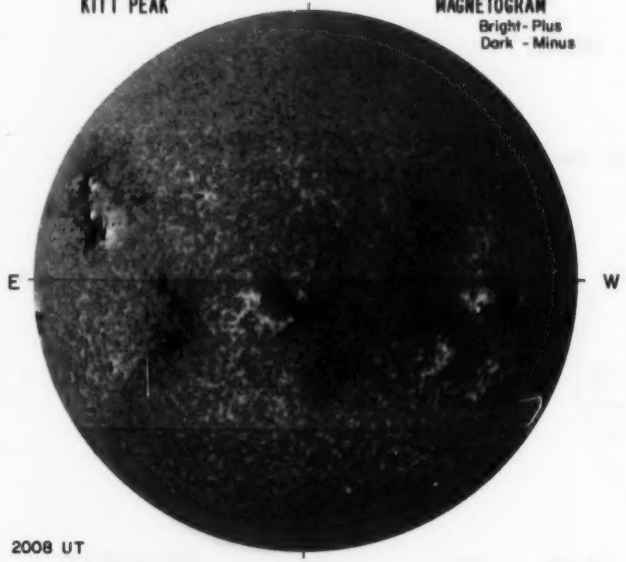
1.15 $R_\odot$ 1540 UT
1.35 $R_\odot$ 1520 UT
1.55 $R_\odot$ 1529 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



2008 UT

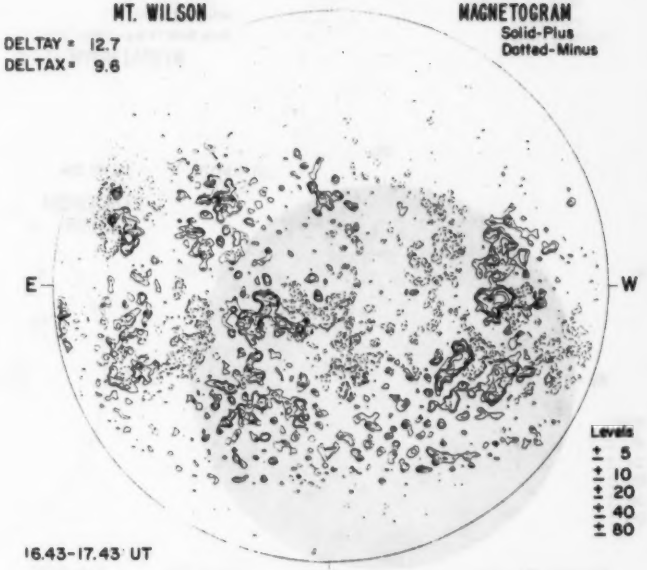
Sp

Np

MT. WILSON

DELTAY = 12.7
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus



16.43-17.43 UT

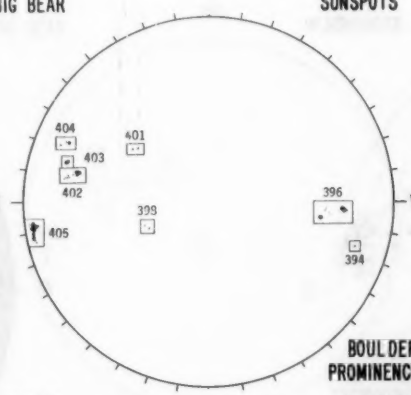
Sp

02

SACRAMENTO PEAK Hα

1452 UT

BIG BEAR SUNSPOTS

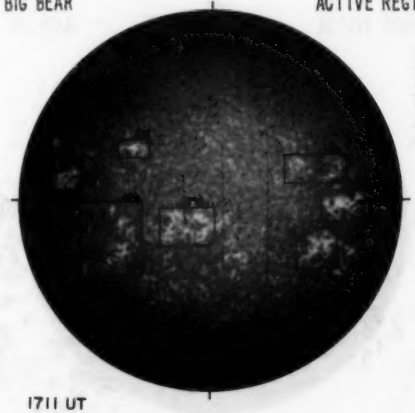


1700 UT

BOULDER PROMINENCES

NO DATA

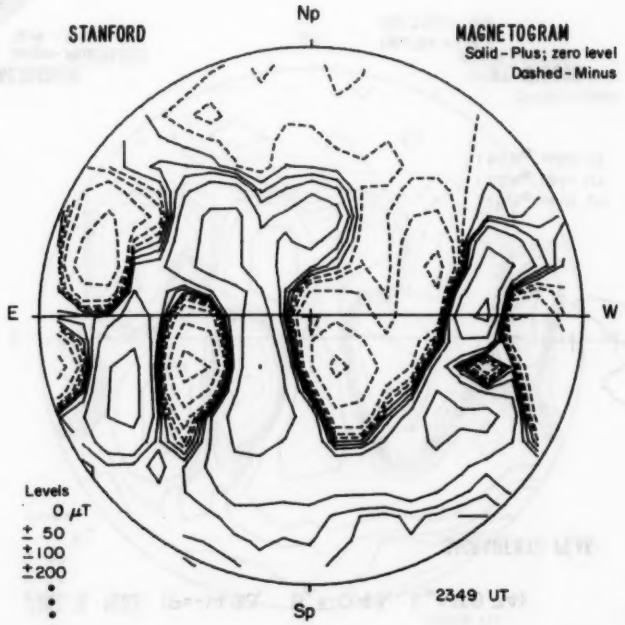
BIG BEAR ACTIVE REGIONS



1711 UT

STANFORD MAGNETOGRAM

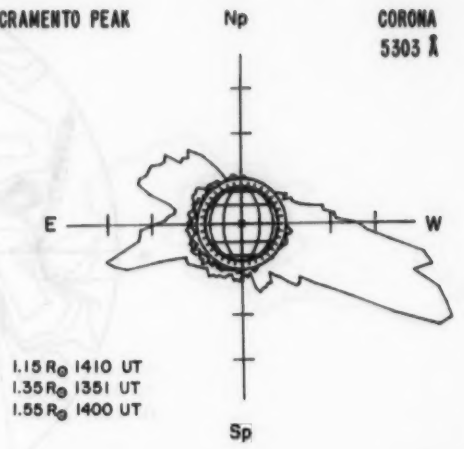
Solid - Plus; zero level
Dashed - Minus



2349 UT

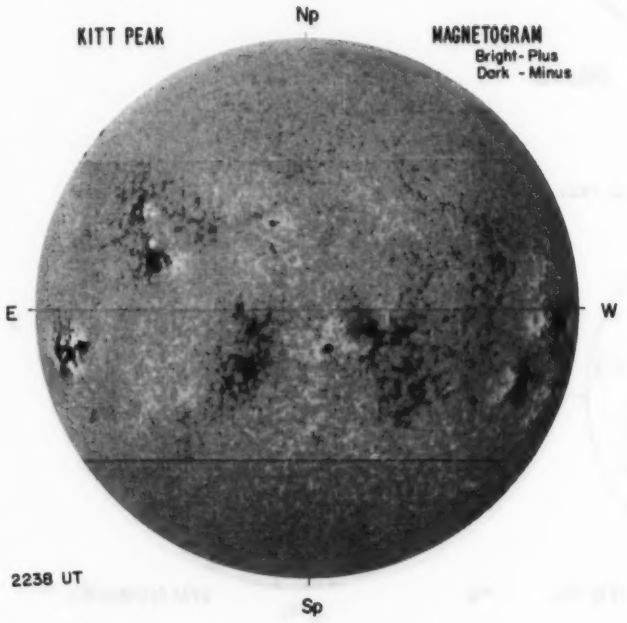
JUNE 3, 1982 (P=-14.83, B_o=-0.43, L_o=158.74)

SACRAMENTO PEAK



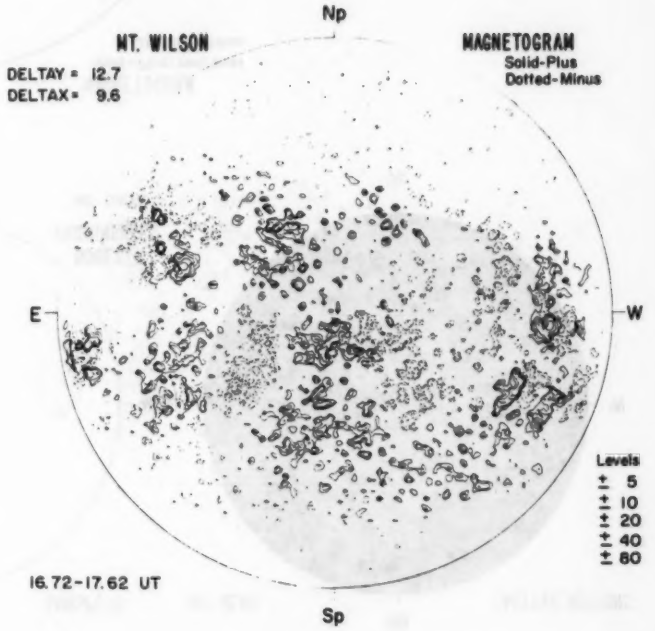
1.15 $R_\odot$ 1410 UT
1.35 $R_\odot$ 1351 UT
1.55 $R_\odot$ 1400 UT

KITT PEAK



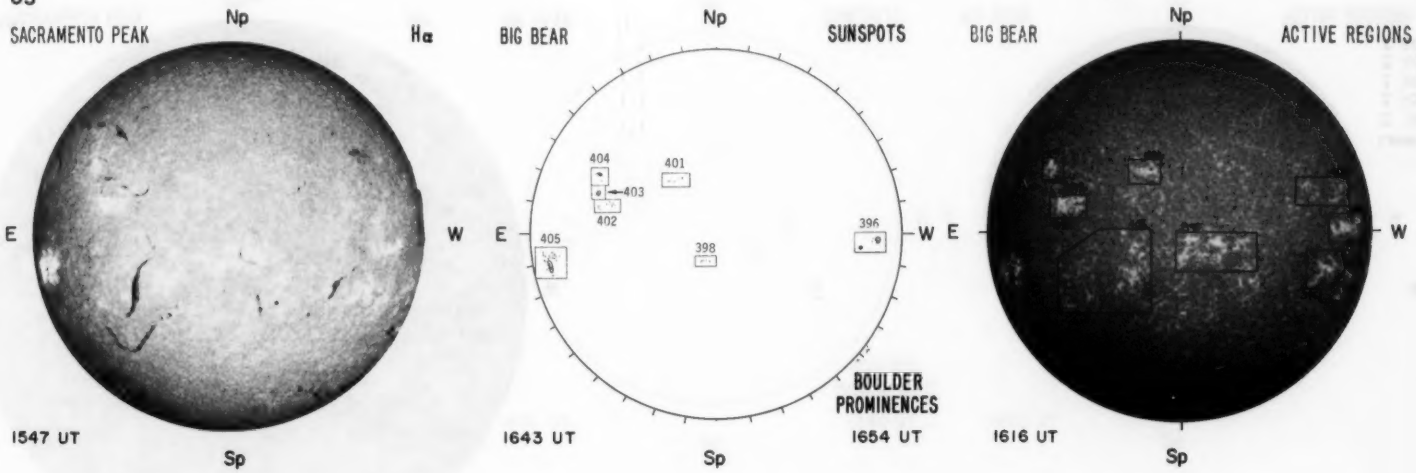
2238 UT

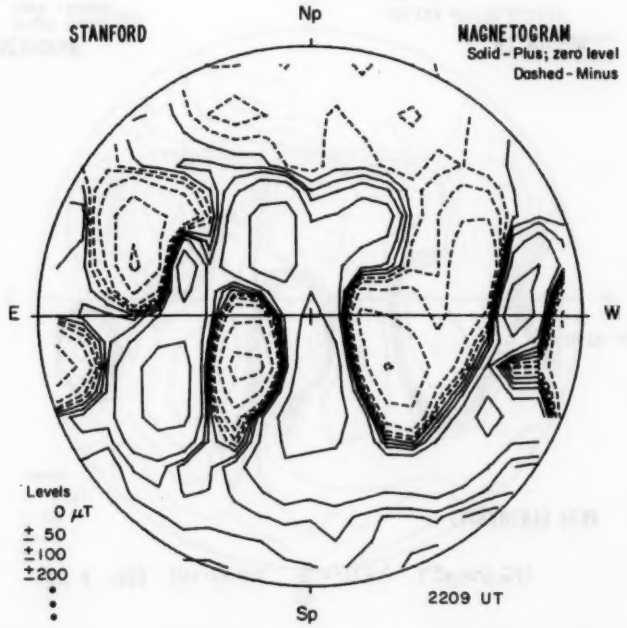
MT. WILSON



16.72-17.62 UT

03


SACRAMENTO PEAK
Np
Hα
E
W
Sp
1547 UT
BIG BEAR
SUNSPOTS
404
401
403
402
405
398
396
BOULDER
PROMINENCES
1643 UT
1654 UT
BIG BEAR
ACTIVE REGIONS
1616 UT


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
Sp
2209 UT

JUNE 4, 1982 (P=-14.44, B_o=-0.31, L_o=145.51)

SACRAMENTO PEAK

Np

CORONA
5303 Å

NO DATA JUNE 4, 6, 8, 9, 10, 11, 12, 13, 17, 18, 20, 21, 22, 29, 30

E

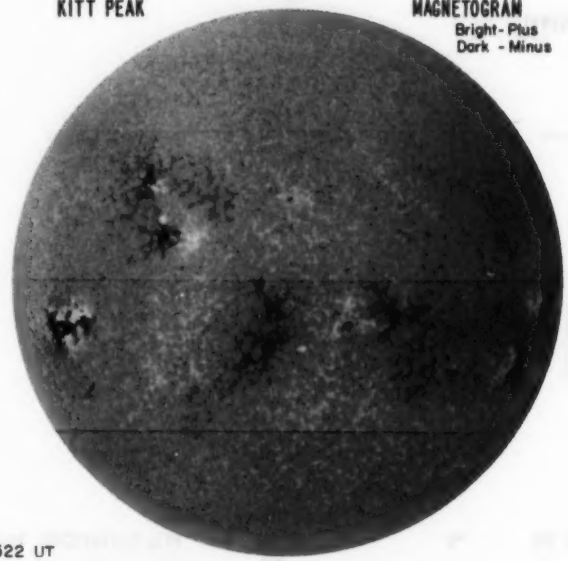
W

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



E

W

1522 UT

Sp

MT. WILSON

Np

DELTAY =
DELTAX =

MAGNETOGRAM
Solid - Plus
Dotted - Minus

E

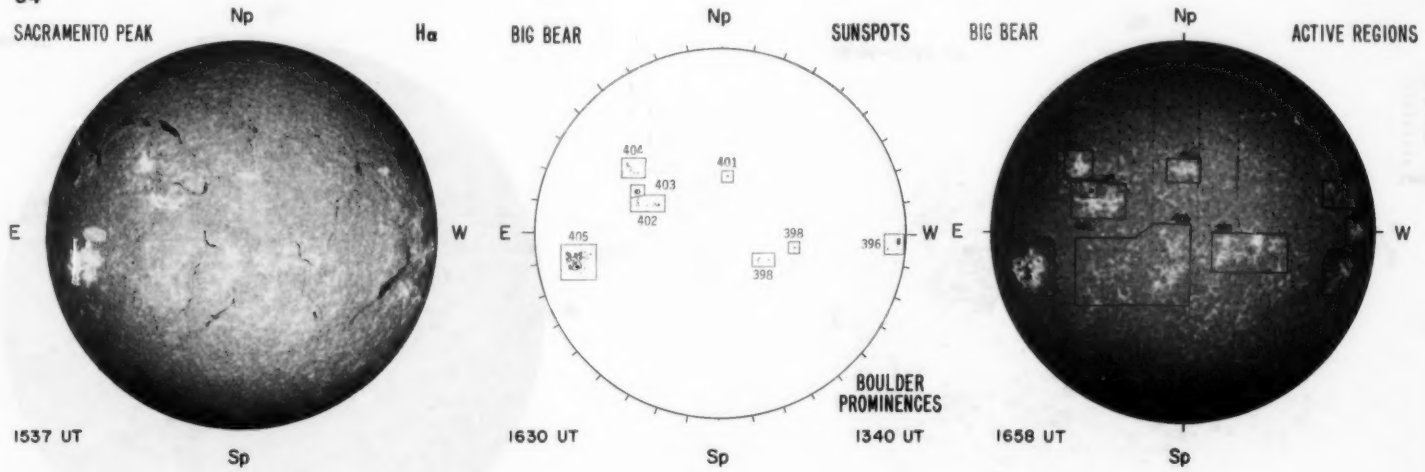
NO DATA

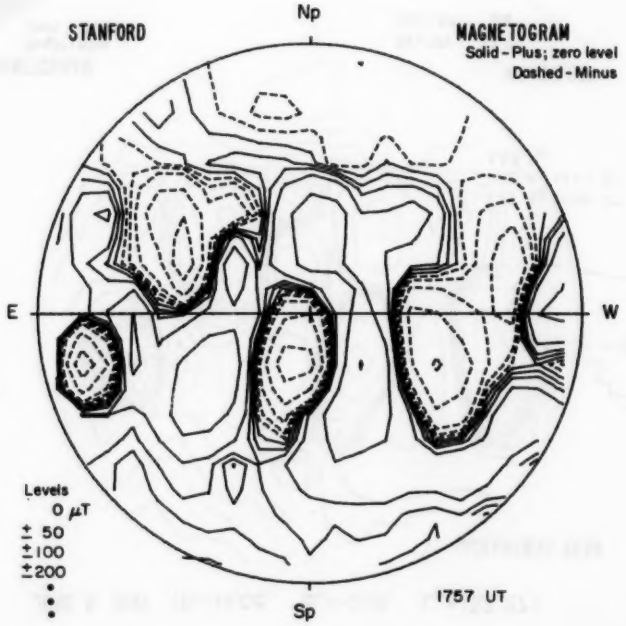
W

Levels
± 5
± 10
± 20
± 40
± 80

Sp

04

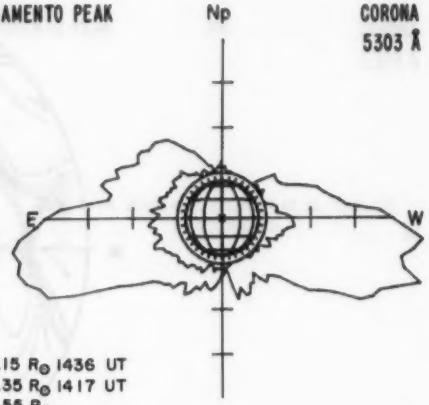

SACRAMENTO PEAK
Np
Hα
E
W
Sp
1537 UT
BIG BEAR
Np
SUNSPOTS
404
403
402
401
405
398
398
396
W E
BOULDER
PROMINENCES
1340 UT
1630 UT
Sp
BIG BEAR
Np
ACTIVE REGIONS
E
W
1658 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
Sp
1757 UT

JUNE 5, 1982 (P=-14.05, B_o=-0.19, L_o=132.27)

SACRAMENTO PEAK

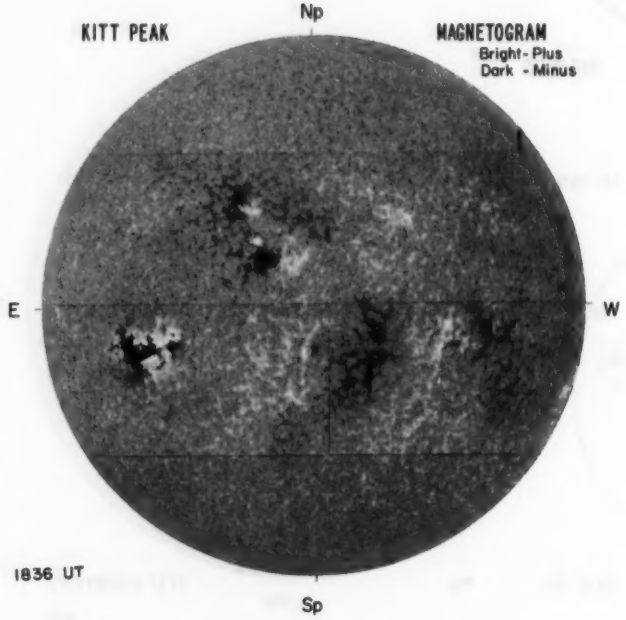
CORONA
5303 Å



1.15 $R_\odot$ 1436 UT
1.35 $R_\odot$ 1417 UT
1.55 $R_\odot$

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

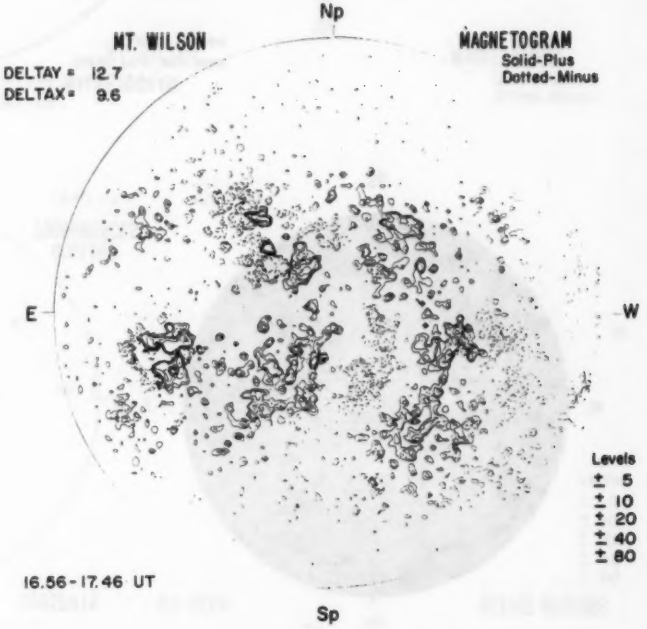


1836 UT

MT. WILSON

DELTAY = 12.7
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus



16.56 - 17.46 UT

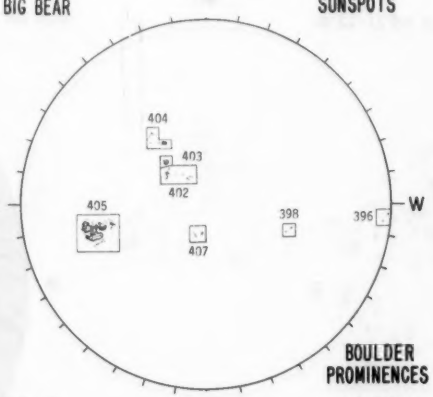
05

SACRAMENTO PEAK

Hα

1513 UT

BIG BEAR



SUNSPOTS

1803 UT

BIG BEAR

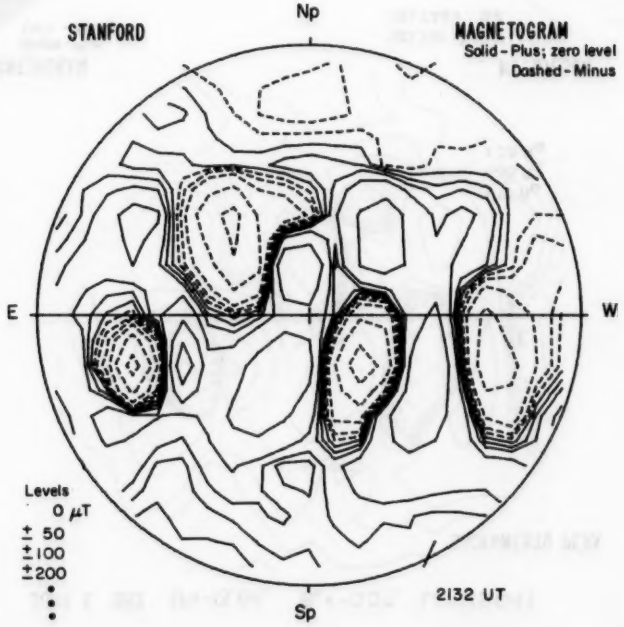
ACTIVE REGIONS

1815 UT

BOULDER PROMINENCES

NO DATA

STANFORD



MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

2132 UT

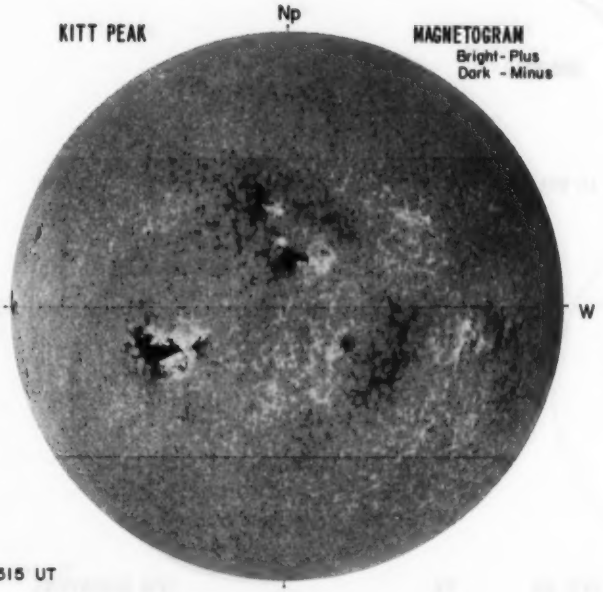
JUNE 6, 1982 (P=-13.66, B_o=-0.07, L_o=119.04)

SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

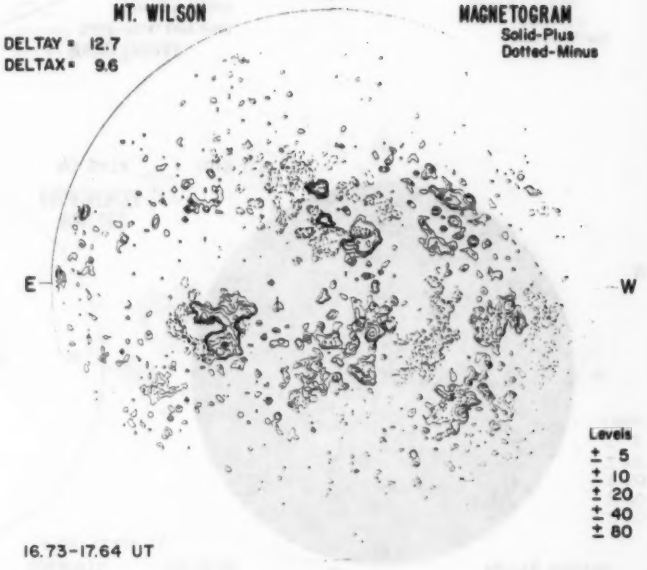
KITT PEAK Np MAGNETOGRAM Bright-Plus Dark-Minus



1515 UT

Sp Np MT. WILSON MAGNETOGRAM Solid-Plus Dotted-Minus

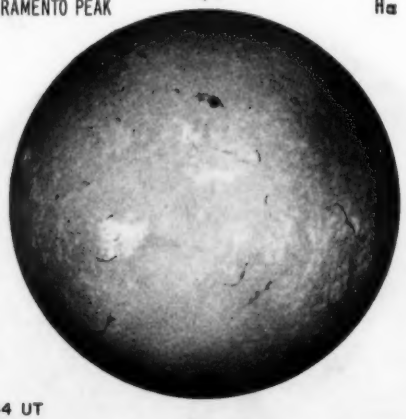
DELTAY = 12.7
DELTAX = 9.6



16.73-17.64 UT

06

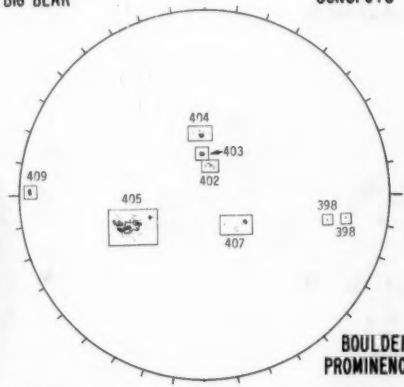
SACRAMENTO PEAK Np Hα



E W

1544 UT Sp

BIG BEAR Np SUNSPOTS

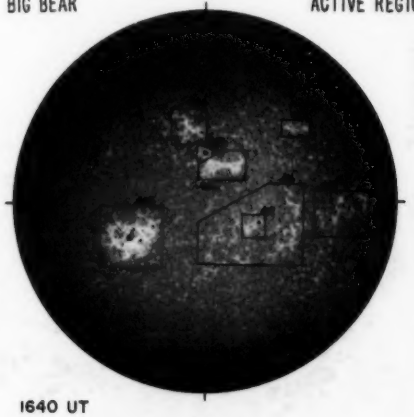


E W

BOULDER PROMINENCES

1805 UT Sp NO DATA

BIG BEAR Np ACTIVE REGIONS



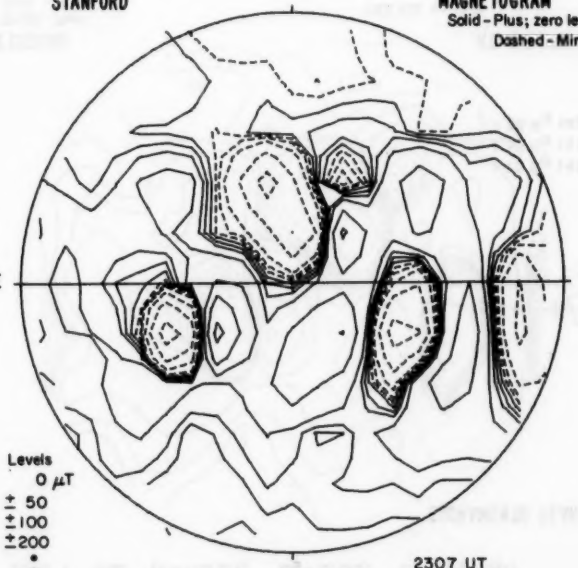
E W

1640 UT Sp

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

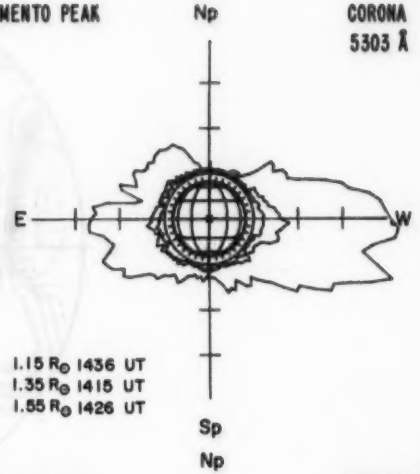
±100

±200

2307 UT Sp

JUNE 7, 1982 (P=-13.27, B_o=0.05, L_o=105.80)

SACRAMENTO PEAK

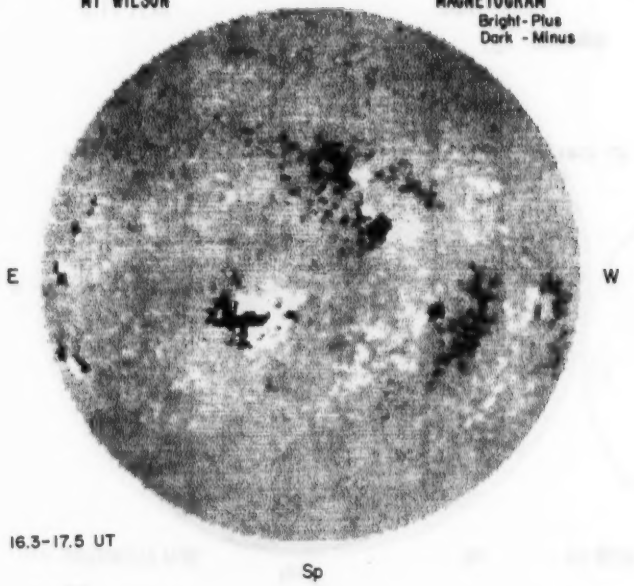


1.15 $R_\odot$ 1436 UT
1.35 $R_\odot$ 1415 UT
1.55 $R_\odot$ 1426 UT

Np

MT WILSON

MAGNETOGRAM
Bright - Plus
Dark - Minus

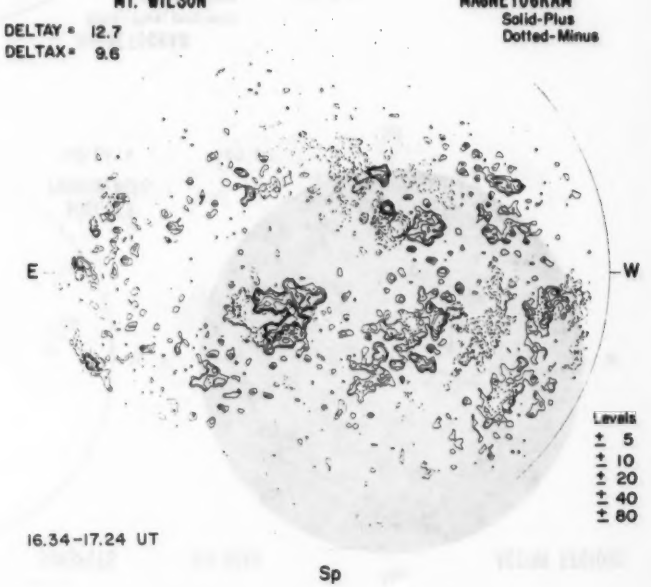


16.3-17.5 UT

MT. WILSON

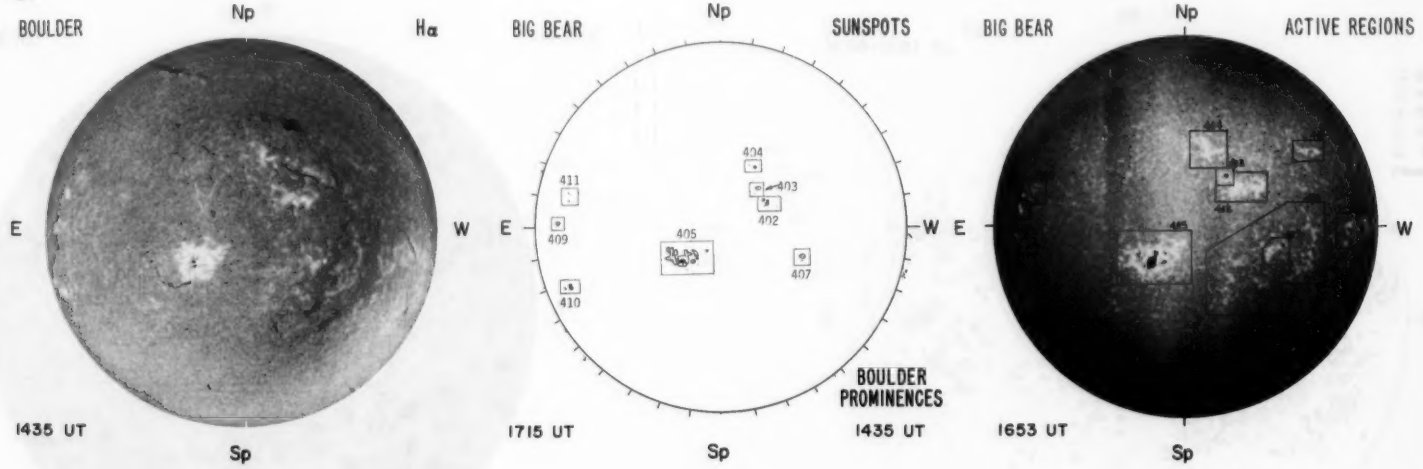
DELTAY = 12.7
DELTAX = 9.6

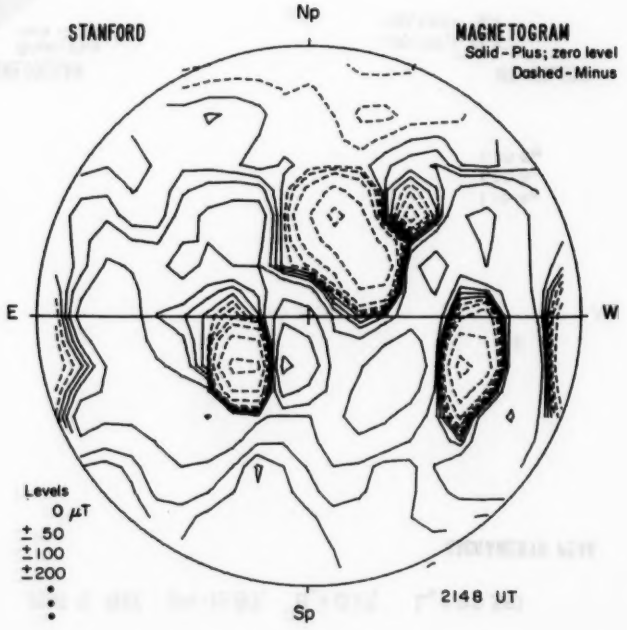
MAGNETOGRAM
Solid-Plus
Dotted-Minus



16.34-17.24 UT

07


BOULDER
Np
Hα
E
W
1435 UT
Sp
BIG BEAR
Np
SUNSPOTS
E
W
404
403
402
411
409
405
407
410
BOULDER
PROMINENCES
1715 UT
1435 UT
Sp
BIG BEAR
Np
ACTIVE REGIONS
E
W
1653 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
Sp
2148 UT

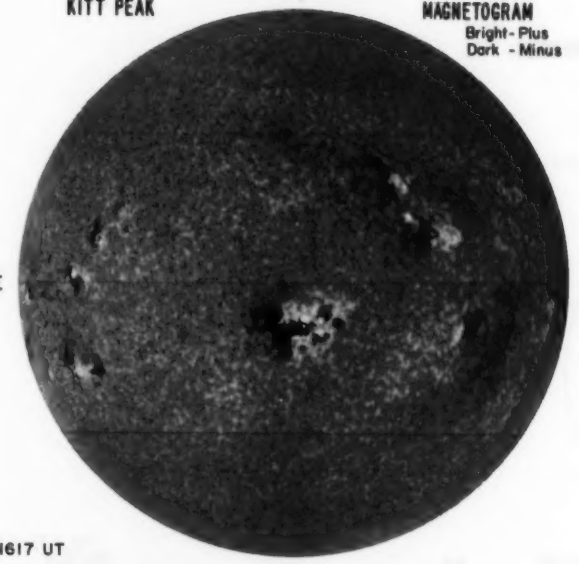
JUNE 8, 1982 (P=-12.87, B_o=0.17, L_o=92.56)

SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

KITT PEAK Np MAGNETOGRAM Bright-Plus Dark-Minus



E W

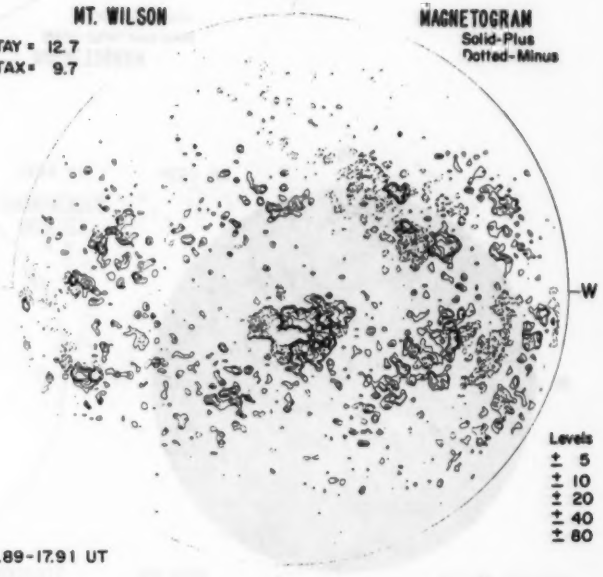
1617 UT

Sp

Sp Np

MT. WILSON MAGNETOGRAM Solid-Plus Dotted-Minus

DELTAY = 12.7
DELTAX = 9.7



E W

Levels
± 5
± 10
± 20
± 40
± 80

16.89-17.91 UT

Sp

08

BOULDER

Np

Hα

E

W

Sp

1450 UT

BIG BEAR

Np

415

412

411

409

410

404

403

402

405

407

E

W

Sp

1623 UT

SUNSPOTS

BOULDER PROMINENCES

1450 UT

BIG BEAR

Np

E

W

Sp

1622 UT

ACTIVE REGIONS

STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

E

NO DATA

W

Levels

0 μT

± 50

±100

±200

Sp

73

Jun 82

JUNE 9, 1982 (P=-12.46, B_o = 0.29, L_o = 79.33)

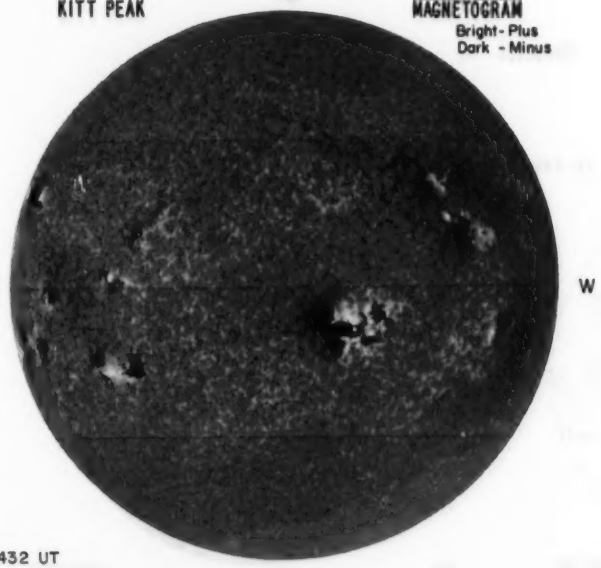
SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

KITT PEAK Np MAGNETOGRAM Bright - Plus Dark - Minus



E W

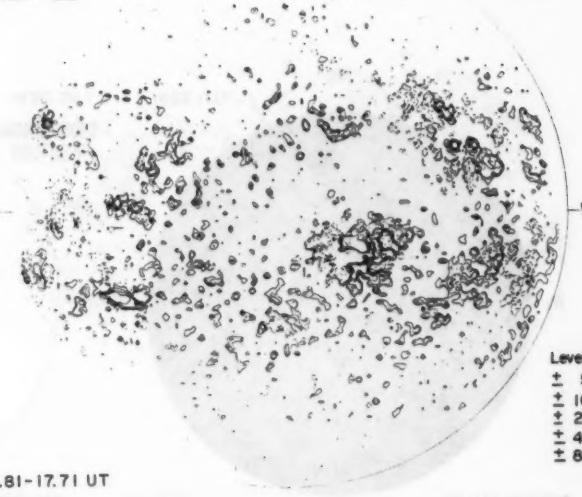
1432 UT

Sp

Np

MT. WILSON MAGNETOGRAM Solid - Plus . Dotted - Minus

DELTAY = 12.7
DELTAX = 9.6



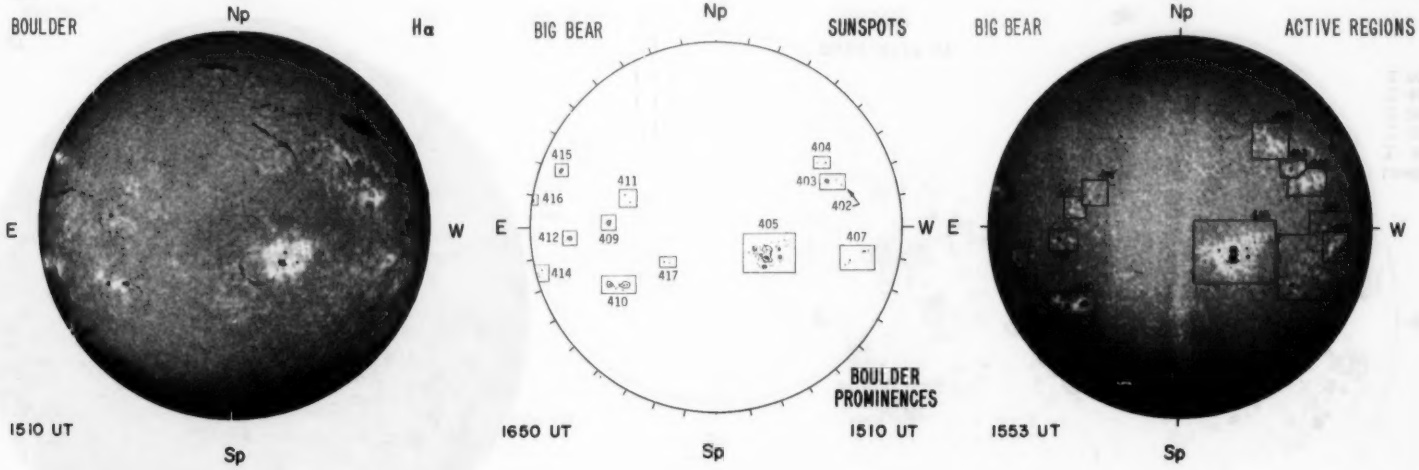
E W

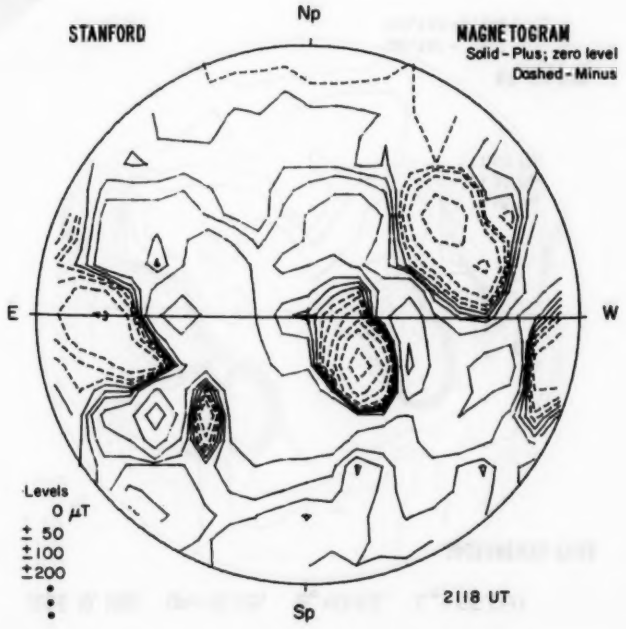
Levels
± 5
± 10
± 20
± 40
± 80

16.81-17.71 UT

Sp

09


BOULDER
Np
Hα
E
W
Sp
1510 UT
BIG BEAR
Np
SUNSPOTS
415
416
411
404
403
402
412
409
405
407
414
417
410
E
W
BOULDER
PROMINENCES
1650 UT
Sp
1510 UT
BIG BEAR
Np
ACTIVE REGIONS
E
W
1553 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
2118 UT
Sp

JUNE 10, 1982 (P=-12.05, B_o=0.42, L_o=66.09)

SACRAMENTO PEAK Np CORONA
5303 Å

E NO DATA W

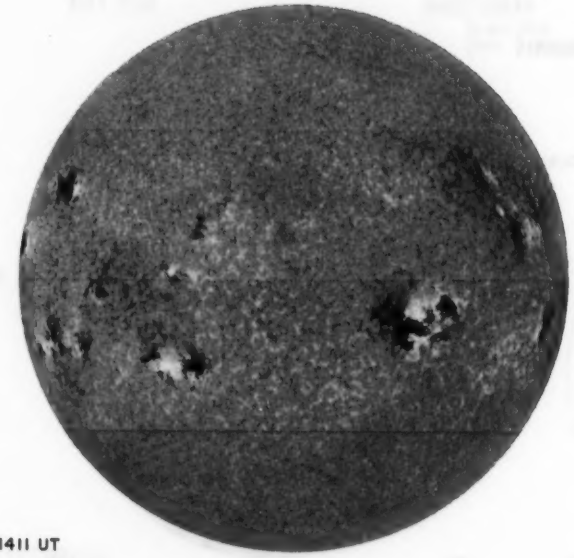
1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

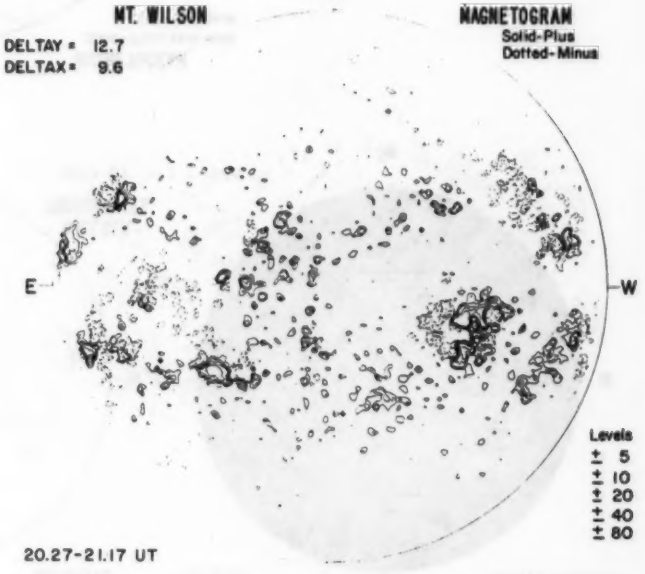
Np

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.6

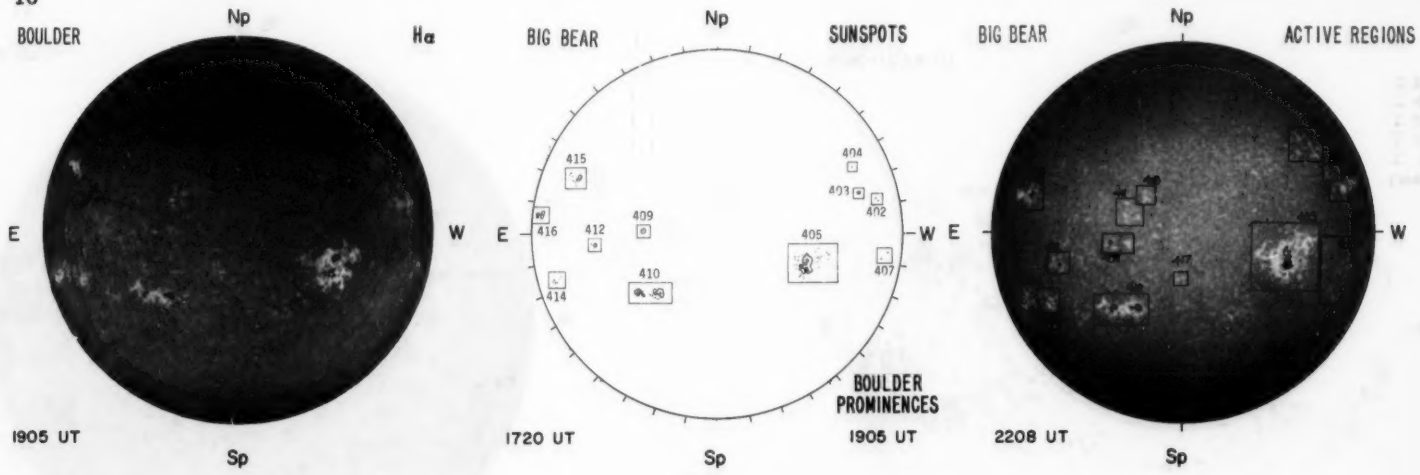


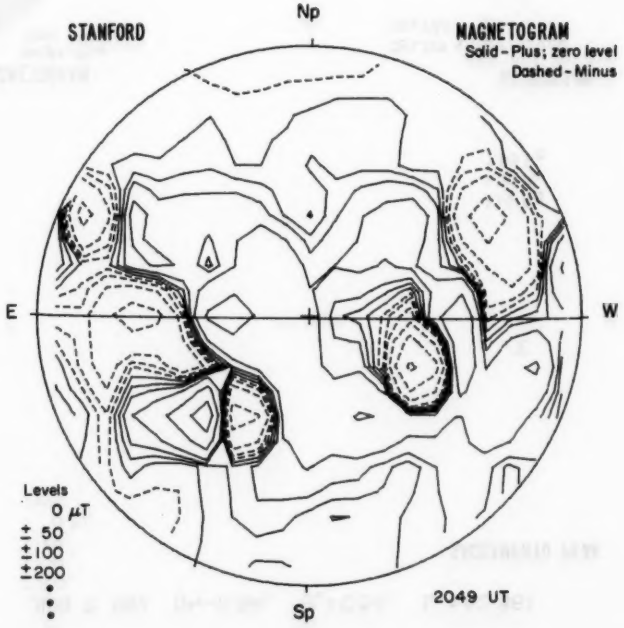
1411 UT



20.27-21.17 UT

Sp


BOULDER
Np
Hα
E
W
Sp
1905 UT
BIG BEAR
Np
SUNSPOTS
415
404
403
402
416
412
409
405
407
410
414
E
W
BOULDER
PROMINENCES
1720 UT
Sp
1905 UT
BIG BEAR
Np
ACTIVE REGIONS
E
W
2208 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
2049 UT
Sp

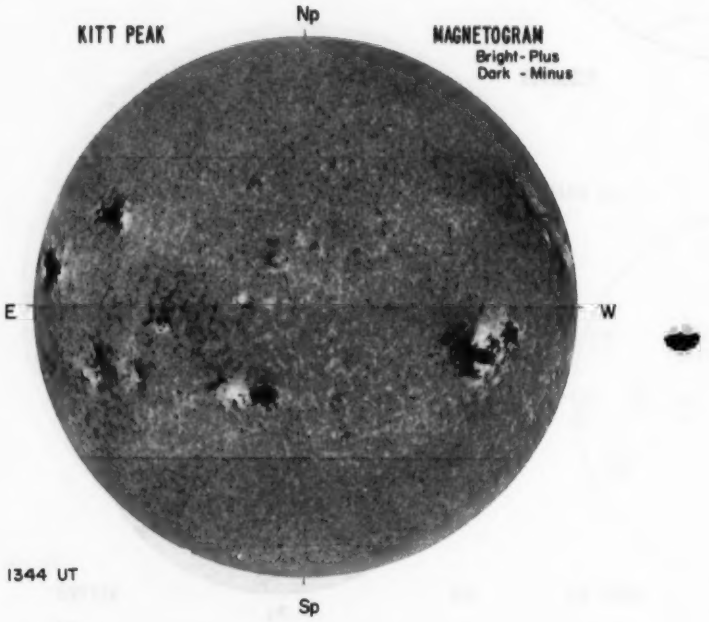
JUNE 11, 1982 (P=-11.64, B_o=0.54, L_o=52.86)

SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

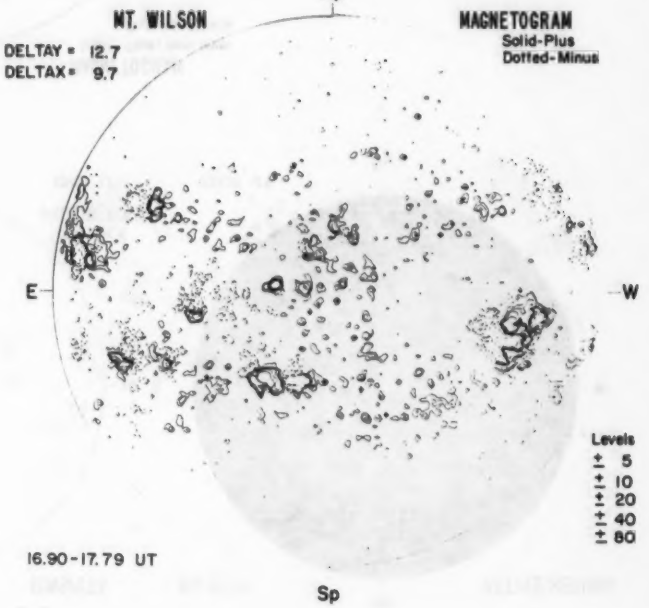
1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

KITT PEAK MAGNETOGRAM
Bright-Plus
Dark - Minus



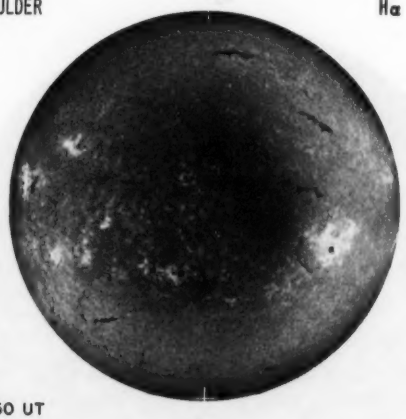
1344 UT

Sp
Np
NT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.7
DELTAX = 9.7



16.90-17.79 UT

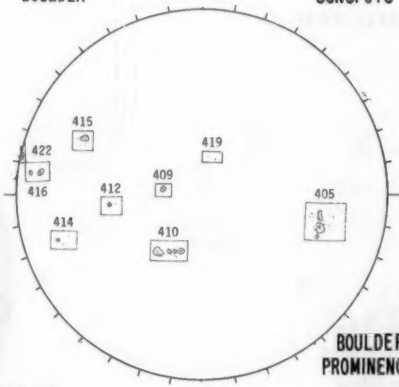
BOULDER Np Hα



E W

1550 UT Sp

BOULDER Np SUNSPOTS

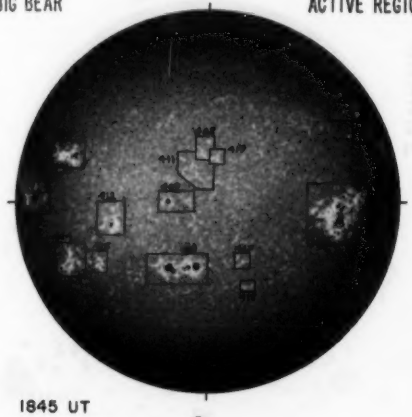


E W

1500 UT Sp 1550 UT

BOULDER PROMINENCES

BIG BEAR Np ACTIVE REGIONS



E W

1845 UT Sp

STANFORD Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E NO DATA W

Levels
0 μT
± 50
±100
±200
•
•
•

Sp

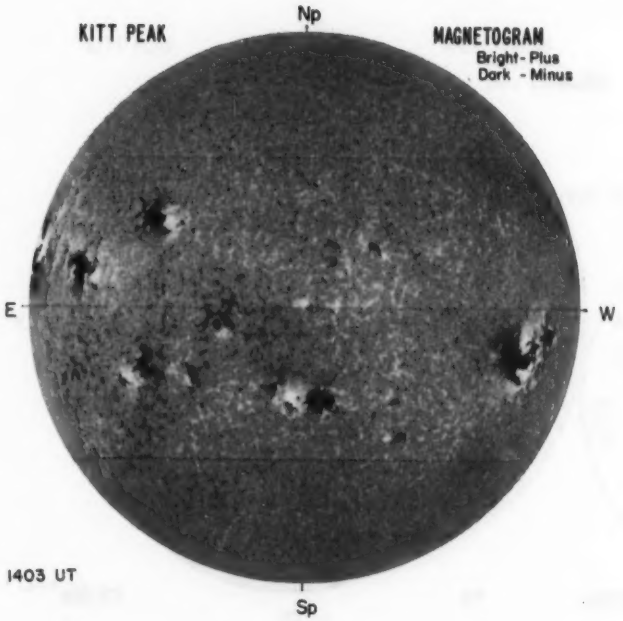
JUNE 12, 1982 (P=-11.22, B_o=0.66, L_o=39.62)

SACRAMENTO PEAK Np CORONA
5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

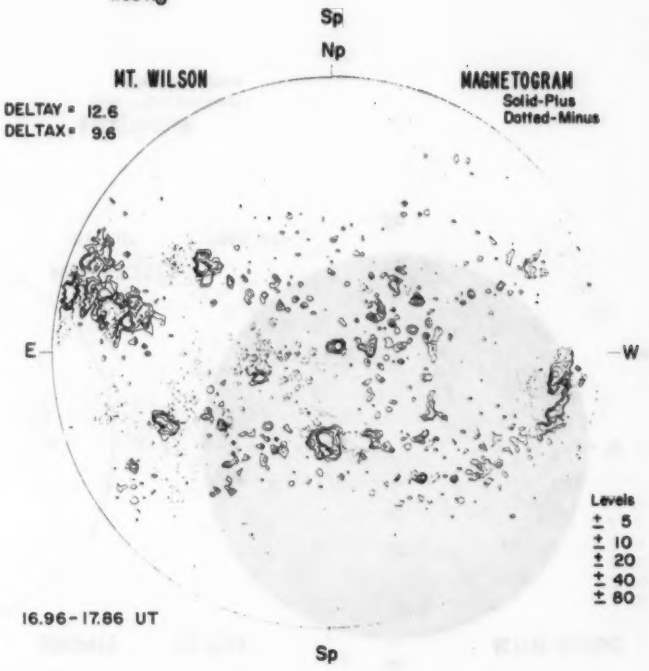
KITT PEAK



MAGNETOGRAM
Bright - Plus
Dark - Minus

1403 UT

MT. WILSON



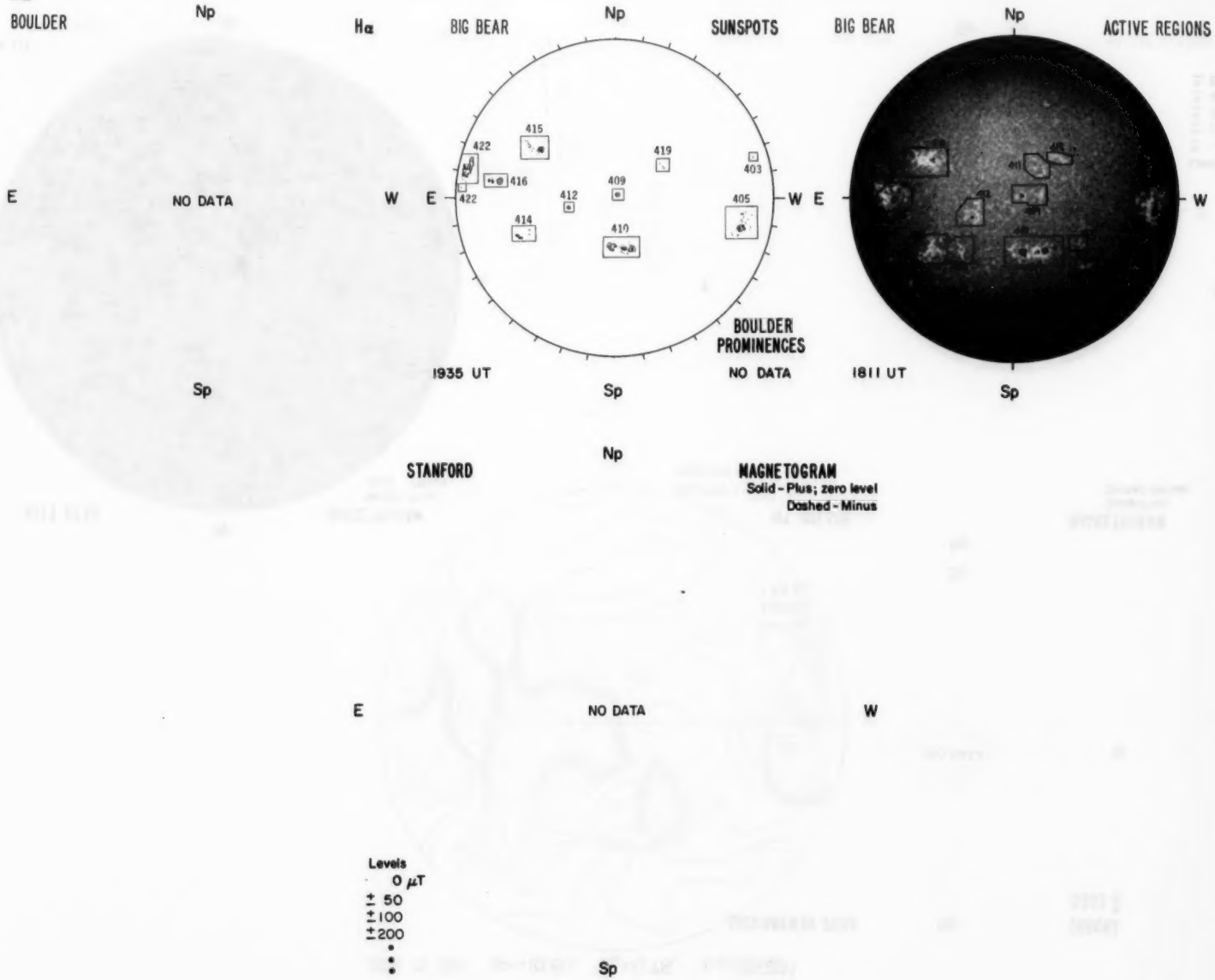
DELTAY = 12.6
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus

Levels
+-+-1 5
+-+-1 10
+-+-1 20
+-+-1 40
+-+-1 80

16.96-17.86 UT

12

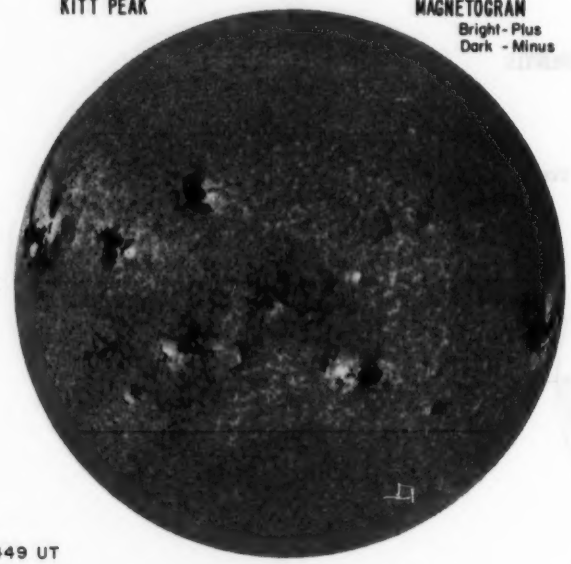

BOULDER
Np
Hα
BIG BEAR
Np
SUNSPOTS
BIG BEAR
Np
ACTIVE REGIONS
E
NO DATA
W
E
W
E
W
422
415
419
403
416
409
422
412
405
414
410
BOULDER
PROMINENCES
1935 UT
NO DATA
1811 UT
Sp
Sp
Sp
STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
NO DATA
W
Levels
0 μT
± 50
± 100
± 200
Sp

JUNE 13, 1982 (P=-10.80, B_o=0.78, L_o=26.38)

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



E

W

1449 UT

Sp

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

NO DATA

W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

Np

MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid-Plus
Dotted-Minus

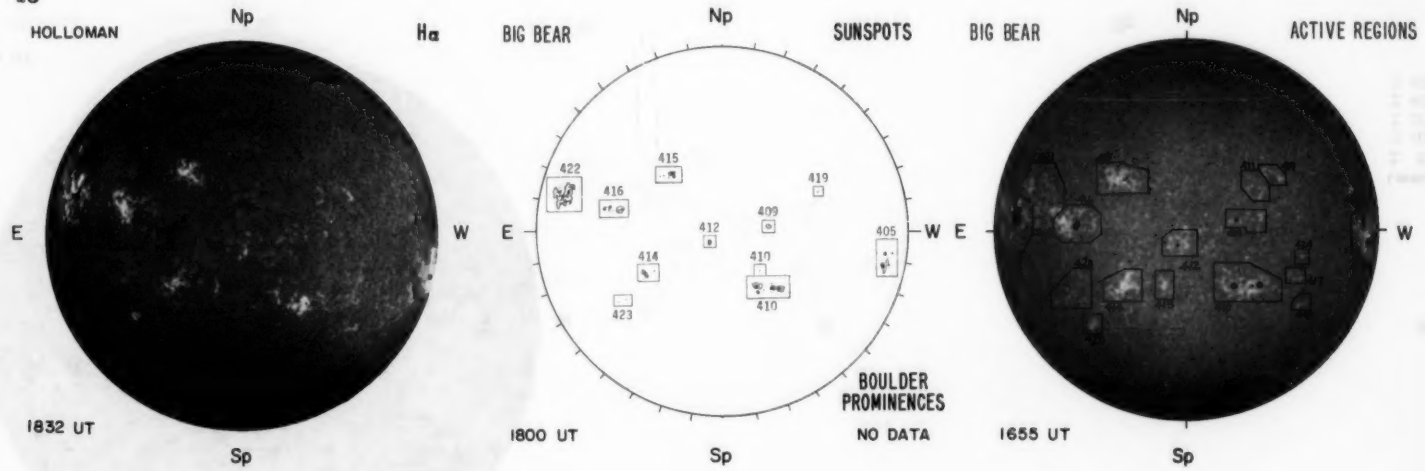
E

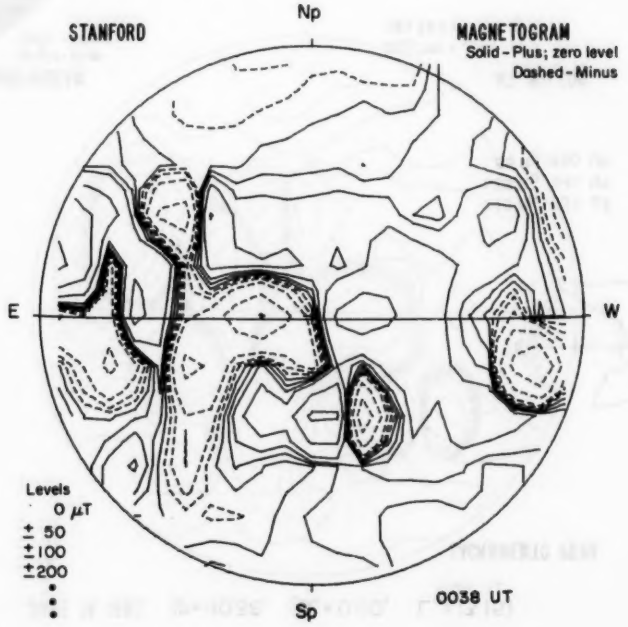
NO DATA

W

Levels
± 5
± 10
± 20
± 40
± 80

Sp


HOLLOMAN
Np
Hα
E
W
Sp
1832 UT
BIG BEAR
Np
SUNSPOTS
422
415
419
416
409
412
405
414
410
423
410
E
W
BOULDER
PROMINENCES
NO DATA
1800 UT
Sp
BIG BEAR
Np
ACTIVE REGIONS
E
W
1655 UT
Sp

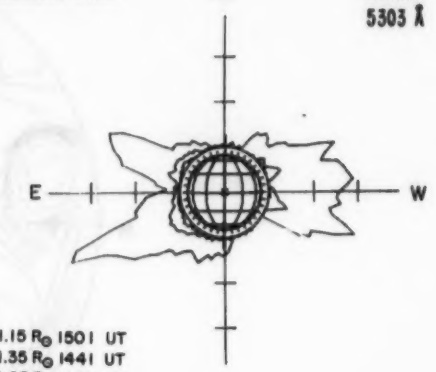

STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
0038 UT
Sp

JUNE 14, 1982 (P=-10.38, B_o=0.90, L_o=13.15)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$ 1501 UT
1.35 $R_\odot$ 1441 UT
1.55 $R_\odot$ 1450 UT

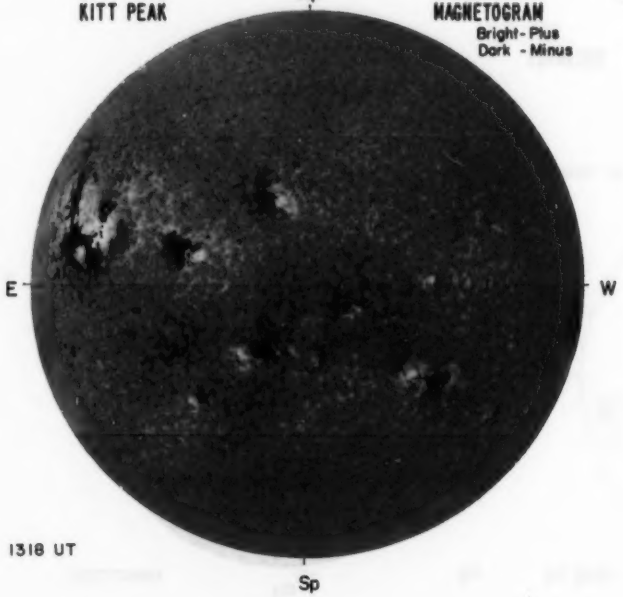
Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright-Plus
Dark - Minus



MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

NO DATA

W

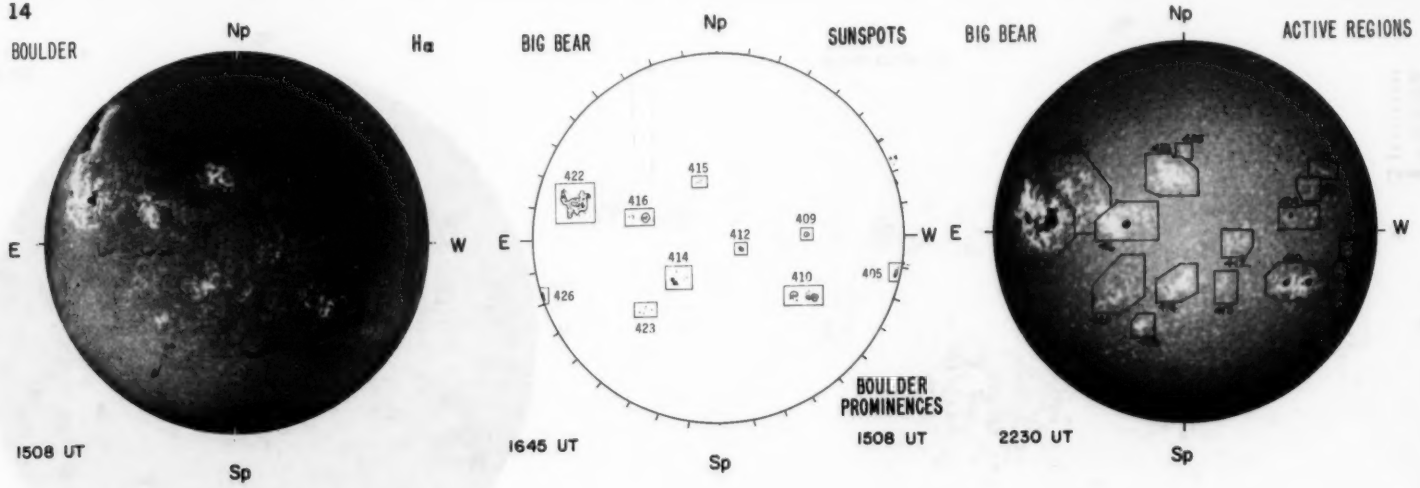
Levels
± 5
± 10
± 20
± 40
± 80

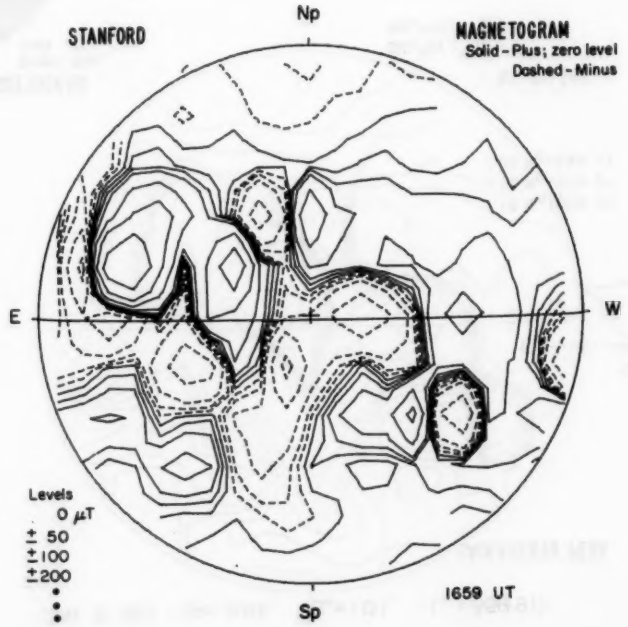
Sp

Np

Np

ACTIVE REGIONS

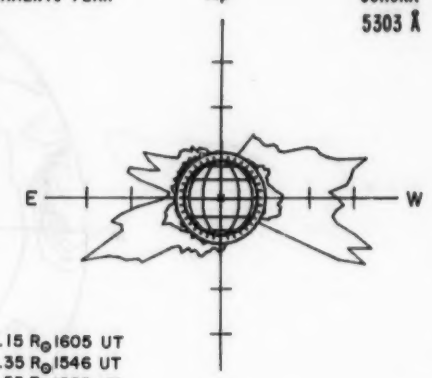

BOULDER
Np
Hα
E
W
Sp
1508 UT
BIG BEAR
Np
SUNSPOTS
422
416
415
409
412
414
410
405
426
423
E
W
1645 UT
Sp
BOULDER
PROMINENCES
1508 UT
BIG BEAR
Np
ACTIVE REGIONS
E
W
2230 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
1659 UT
Sp

JUNE 15, 1982 (P=-9.96, B_o=1.01, L_o=359.91)

SACRAMENTO PEAK

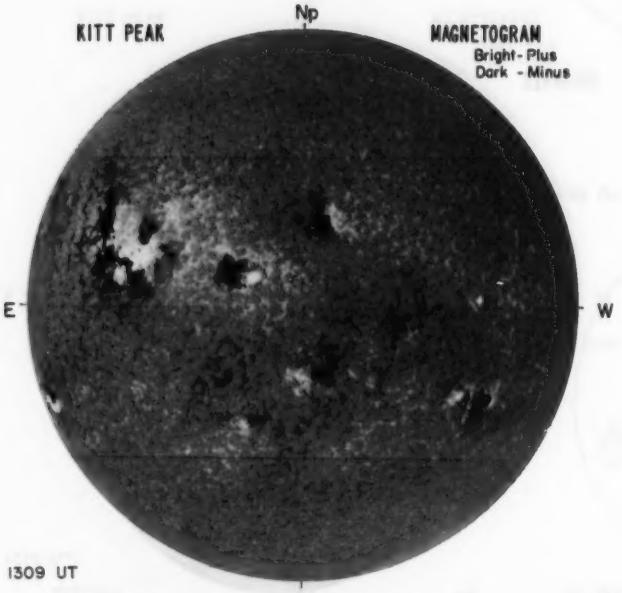
CORONA
5303 Å



1.15 $R_\odot$ 1605 UT
1.35 $R_\odot$ 1546 UT
1.55 $R_\odot$ 1555 UT

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

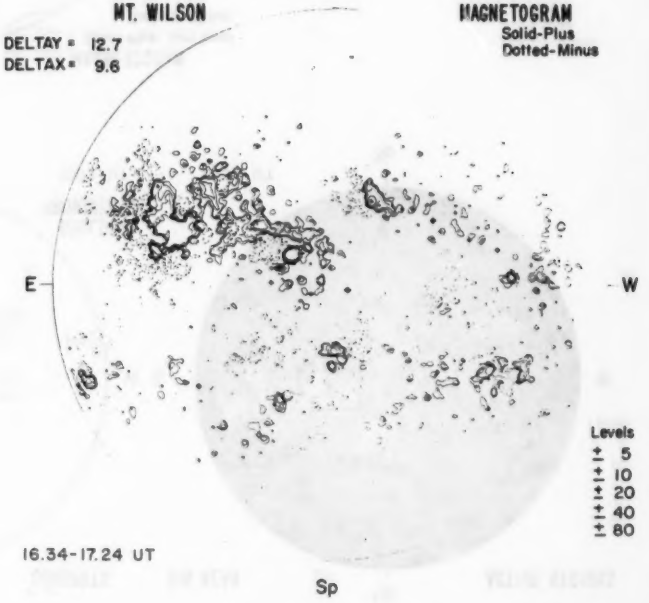


1309 UT

MT. WILSON

DELTAY = 12.7
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus

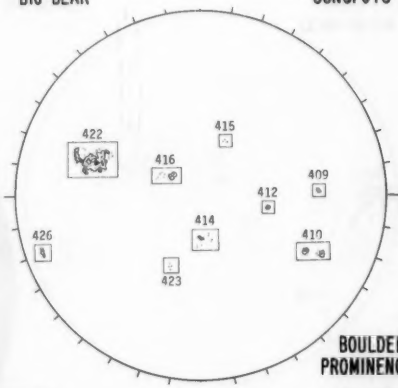


16.34-17.24 UT

HOLLOMAN Np Hα

1407 UT Sp

BIG BEAR Np SUNSPOTS

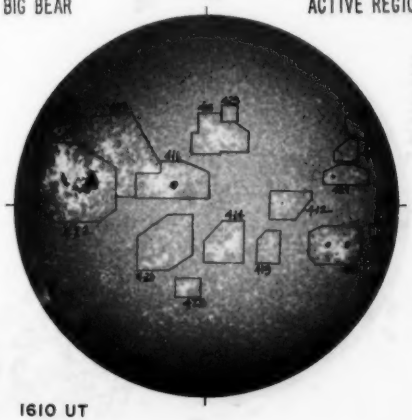


BOULDER PROMINENCES

NO DATA

1600 UT Sp

BIG BEAR Np ACTIVE REGIONS

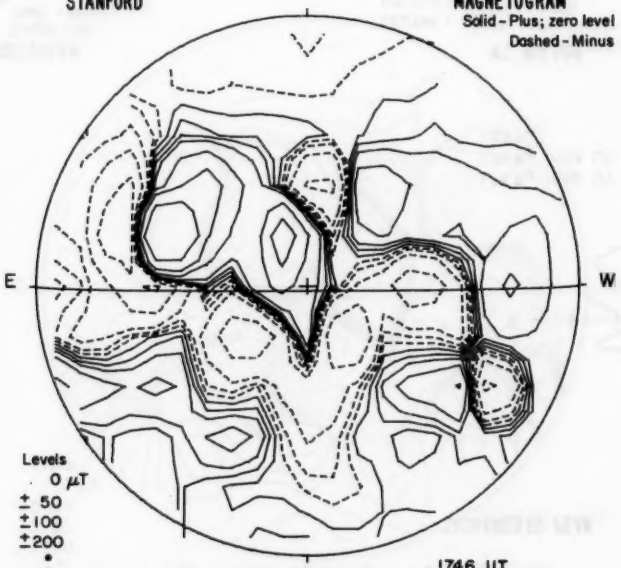


1610 UT Sp

STANFORD Np MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

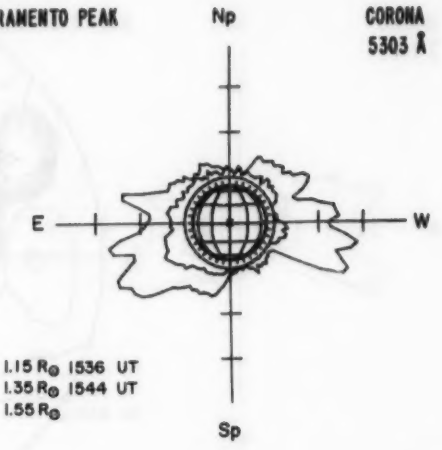


1746 UT Sp

87
Jun 82

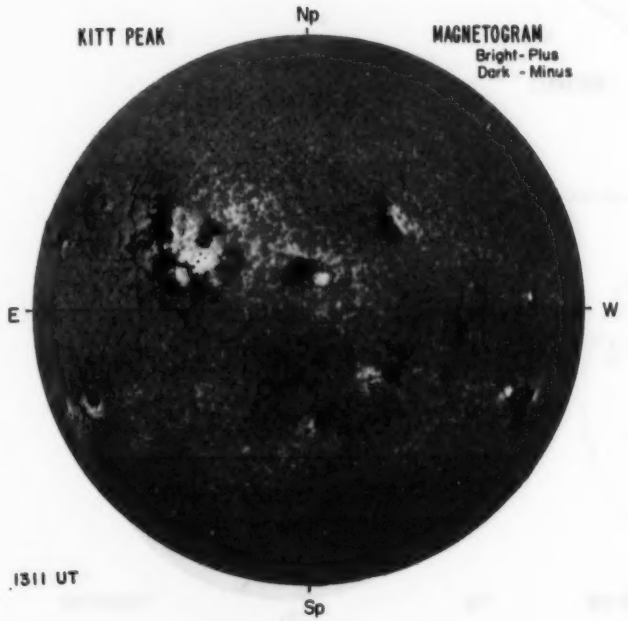
JUNE 16, 1982 (P=-9.53, B_o=1.13, L_o=346.67)

SACRAMENTO PEAK



1.15 $R_\odot$ 1536 UT
1.35 $R_\odot$ 1544 UT
1.55 $R_\odot$

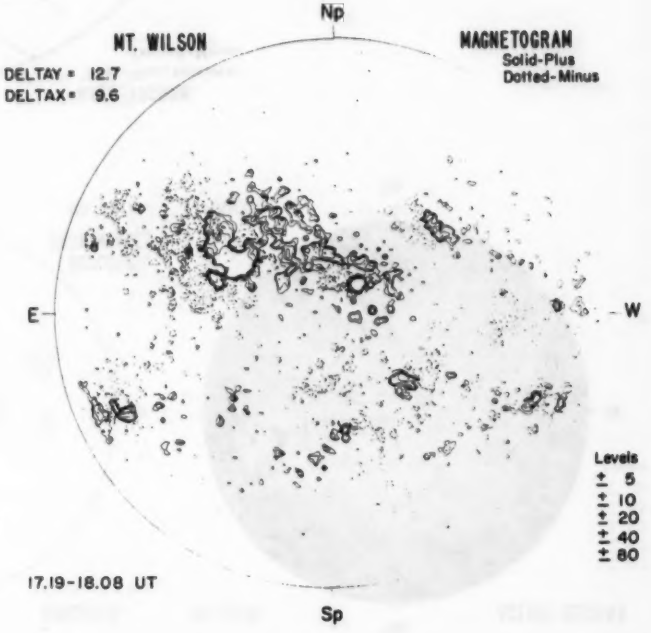
KITT PEAK



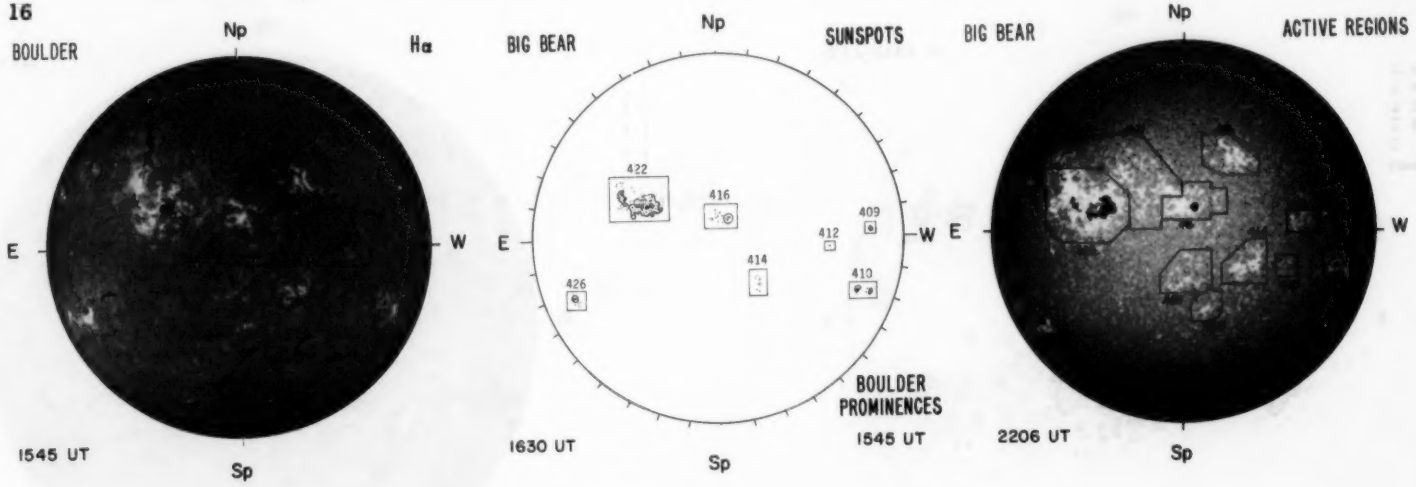
1311 UT

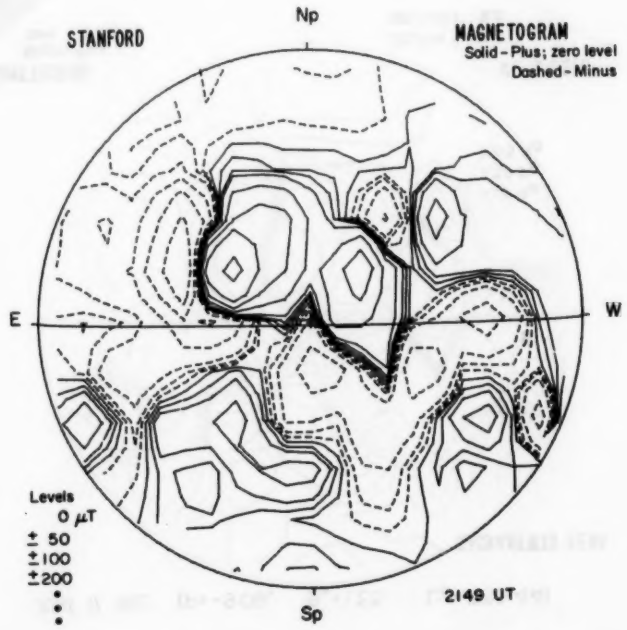
MT. WILSON

DELTAY = 12.7
DELTAX = 9.6



17.19-18.08 UT


BOULDER
Np
Hα
E
W
Sp
1545 UT
BIG BEAR
Np
SUNSPOTS
422
416
409
412
414
410
426
E
W
BOULDER
PROMINENCES
1545 UT
1630 UT
Sp
BIG BEAR
Np
ACTIVE REGIONS
E
W
2206 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
2149 UT
Sp

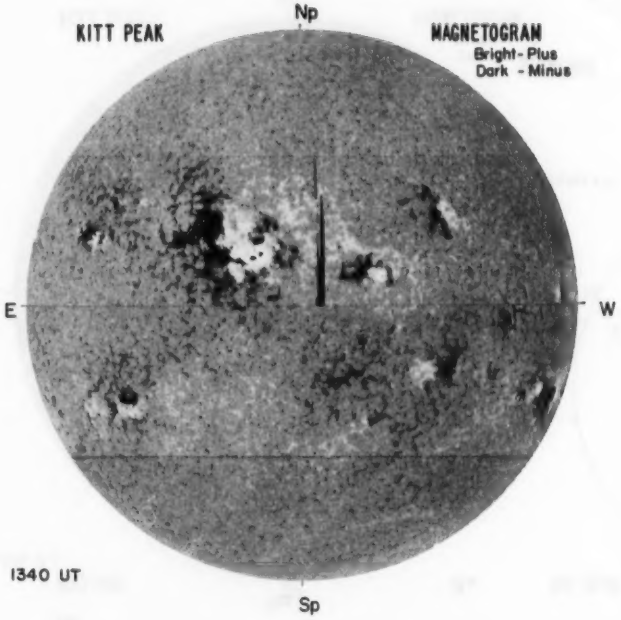
JUNE 17, 1982 (P=-9.09, B_o=1.25, L_o=333.44)

SACRAMENTO PEAK Np CORONA
5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

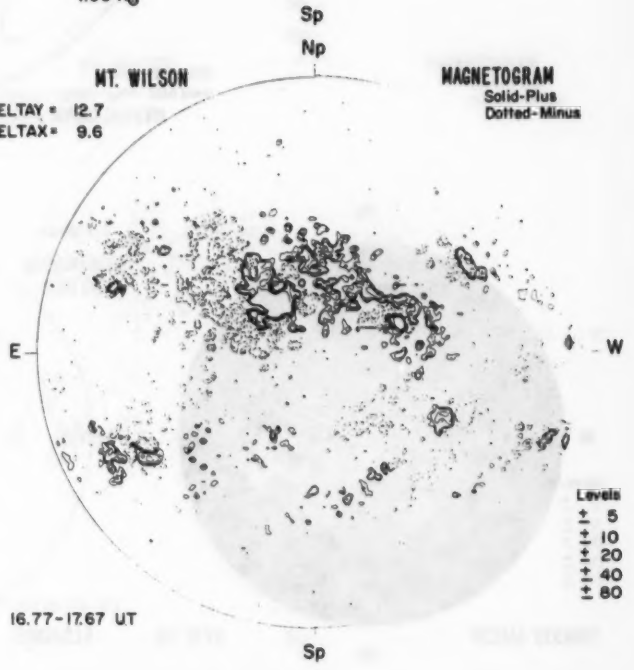
KITT PEAK MAGNETOGRAM
Bright-Plus
Dark - Minus



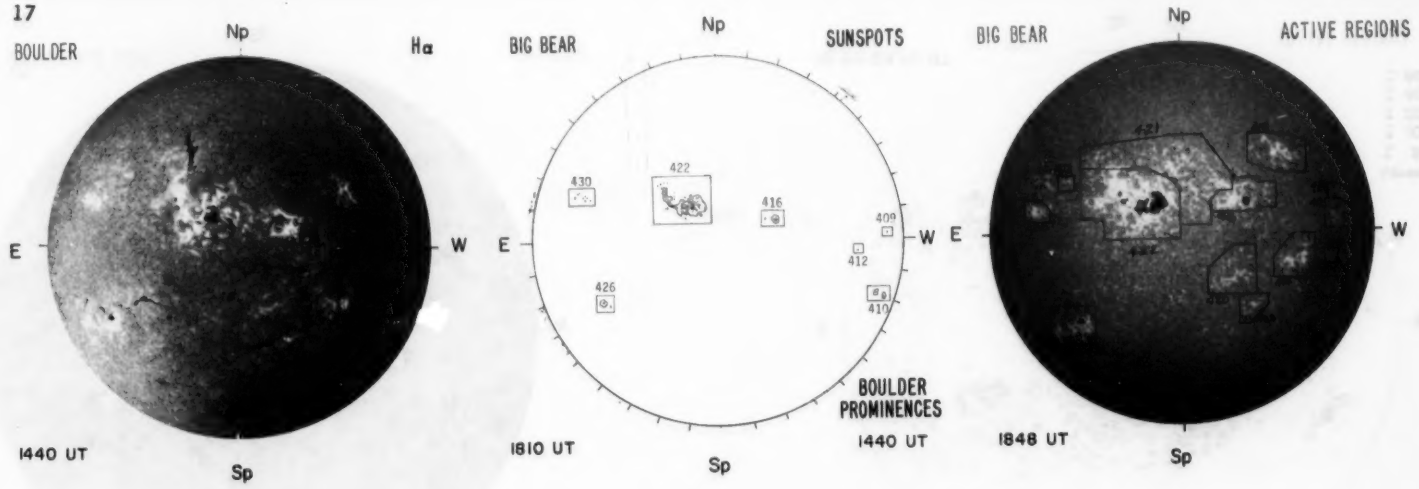
1340 UT

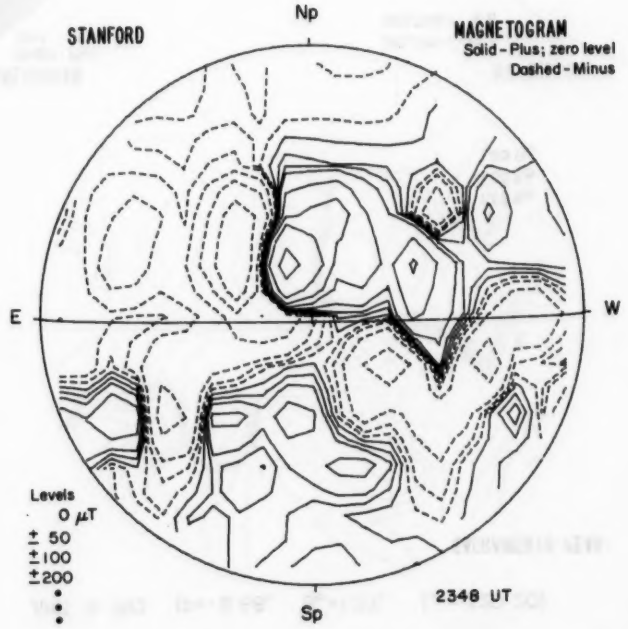
MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.7
DELTAX = 9.6



16.77-17.67 UT


BOULDER
Np
Hα
E
W
Sp
1440 UT
BIG BEAR
Np
SUNSPOTS
430
422
416
409
412
426
410
E
W
BOULDER
PROMINENCES
1440 UT
1810 UT
Sp
BIG BEAR
Np
ACTIVE REGIONS
421
E
W
1848 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
2348 UT
Sp

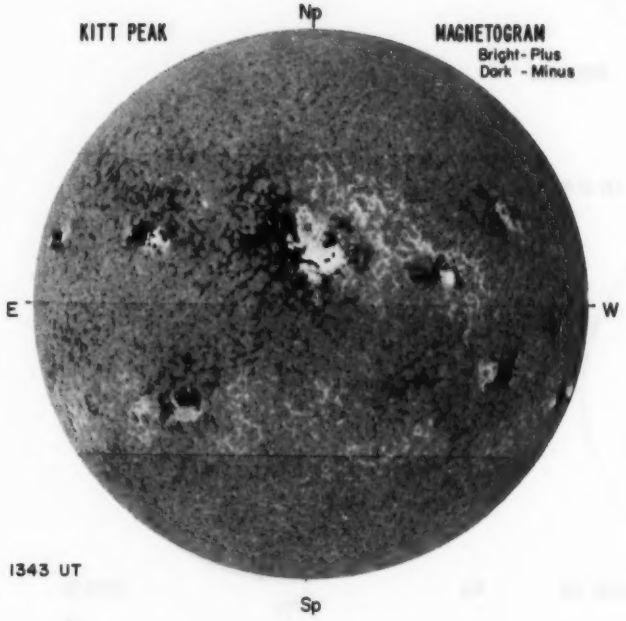
JUNE 18, 1982 (P=-8.66, B_o=1.37, L_o=320.20)

SACRAMENTO PEAK Np CORONA
5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

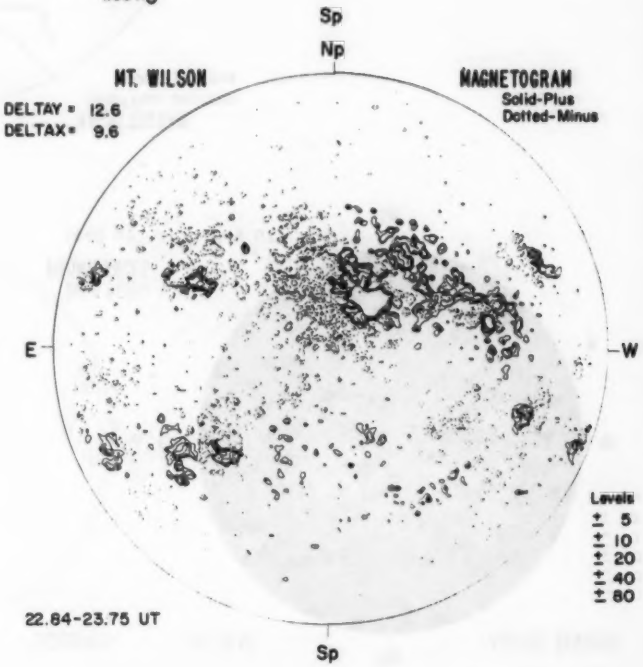
KITT PEAK MAGNETOGRAM
Bright - Plus
Dark - Minus



1343 UT

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus

DELTAY = 12.6
DELTAX = 9.6



22.84-23.75 UT

SACRAMENTO PEAK

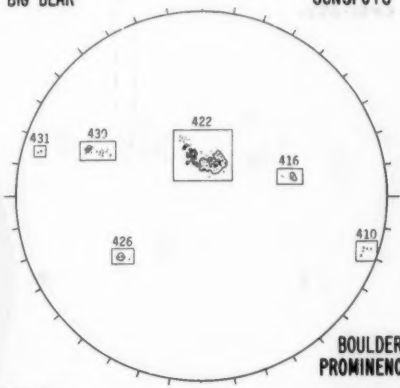
Np

E NO DATA W

Sp

Hα BIG BEAR

Np



E W

1605 UT

Sp

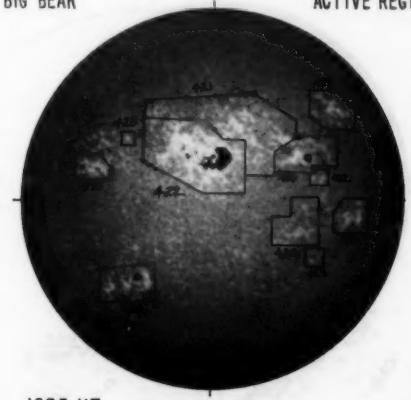
SUNSPOTS

BOULDER PROMINENCES

NO DATA

BIG BEAR

Np



E W

1625 UT

Sp

ACTIVE REGIONS

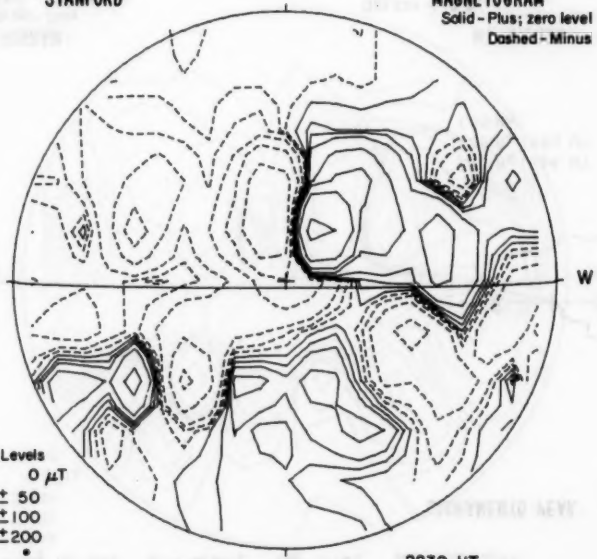
STANFORD

Np

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus



E W

Levels

0 μT

± 50

±100

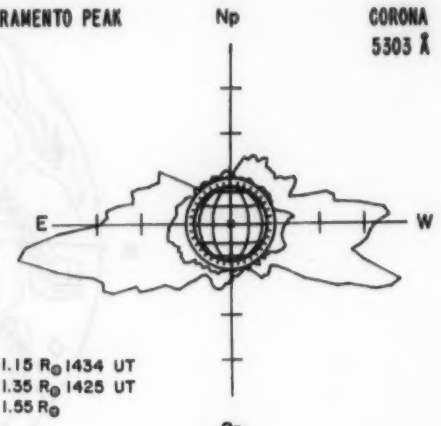
±200

Sp

2239 UT

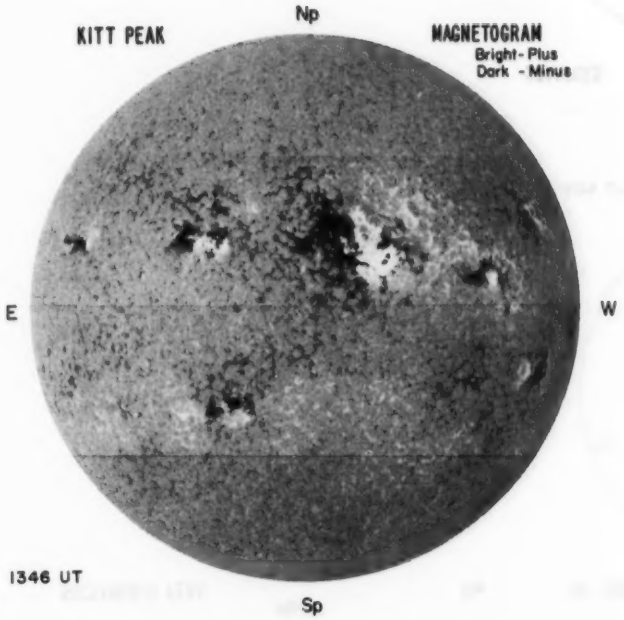
JUNE 19, 1982 (P=-8.22, B_o= 1.49, L_o=306.96)

SACRAMENTO PEAK



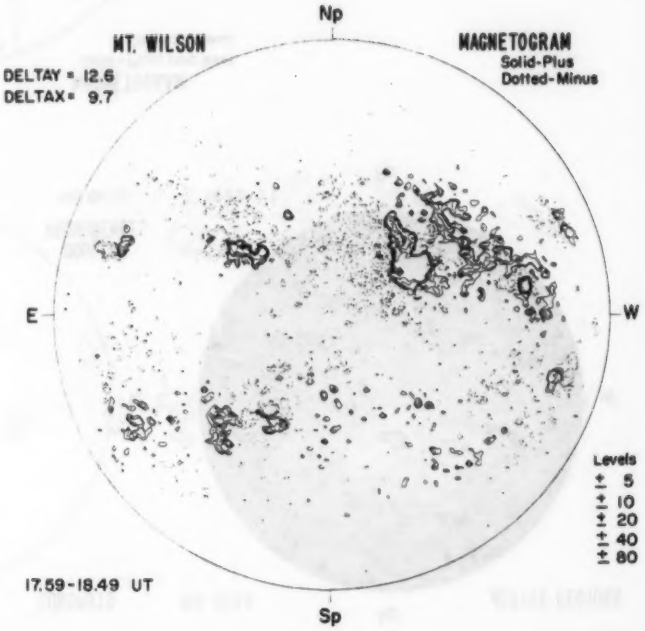
1.15 $R_\odot$ 1434 UT
1.35 $R_\odot$ 1425 UT
1.55 $R_\odot$

KITT PEAK

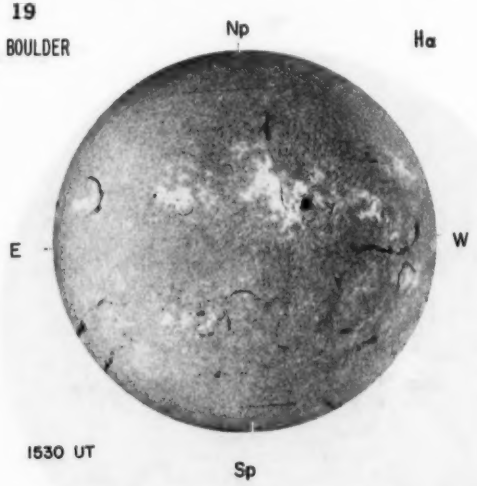


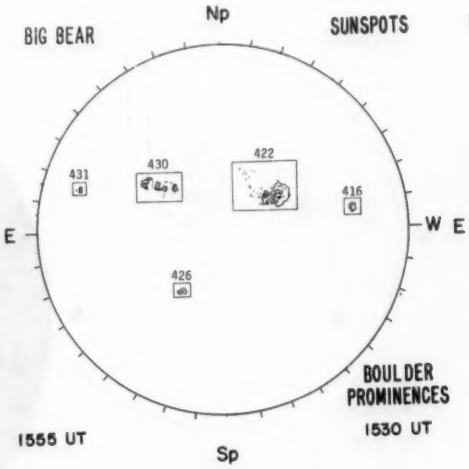
1346 UT

MT. WILSON

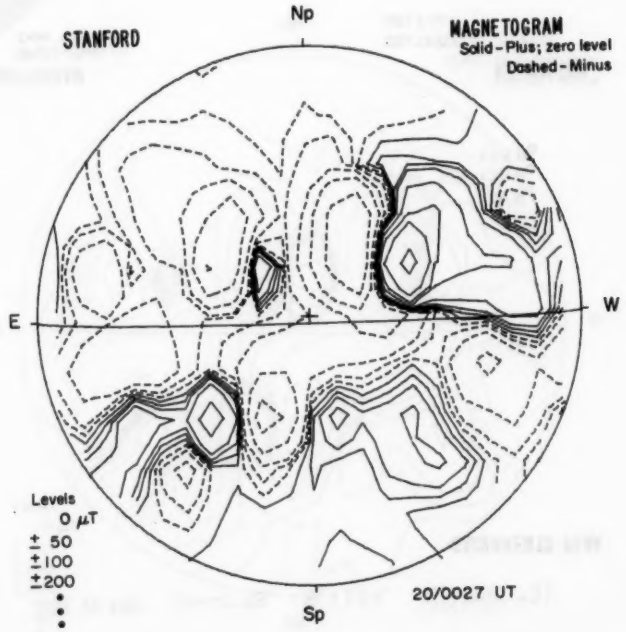


17.59-18.49 UT


BOULDER
Np
Hα
E
W
1530 UT
Sp

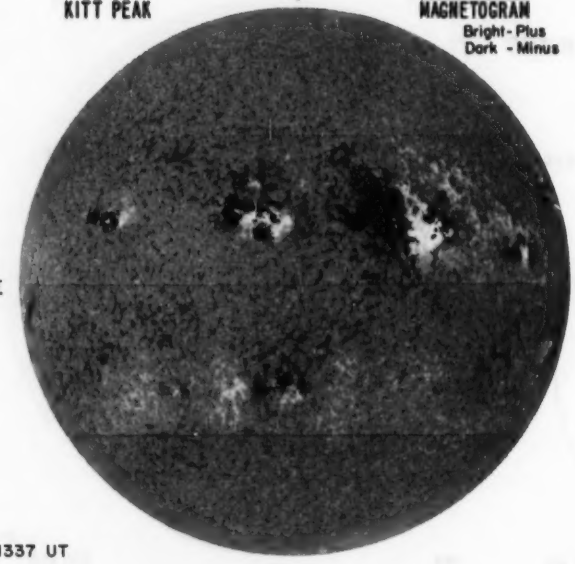

BIG BEAR
Np
SUNSPOTS
431
430
422
416
426
E
W E
BOULDER
PROMINENCES
1555 UT
1530 UT
Sp

BIG BEAR
Np
ACTIVE REGIONS
422
E
W
1622 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
20/0027 UT
Sp

JUNE 20, 1982 (P=-7.78, B_o=1.61, L_o=293.73)

KITT PEAK Np MAGNETOGRAM
Bright - Plus
Dark - Minus



E W

1337 UT

Sp

SACRAMENTO PEAK Np CORONA
5303 Å

E NO DATA W

1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

Np

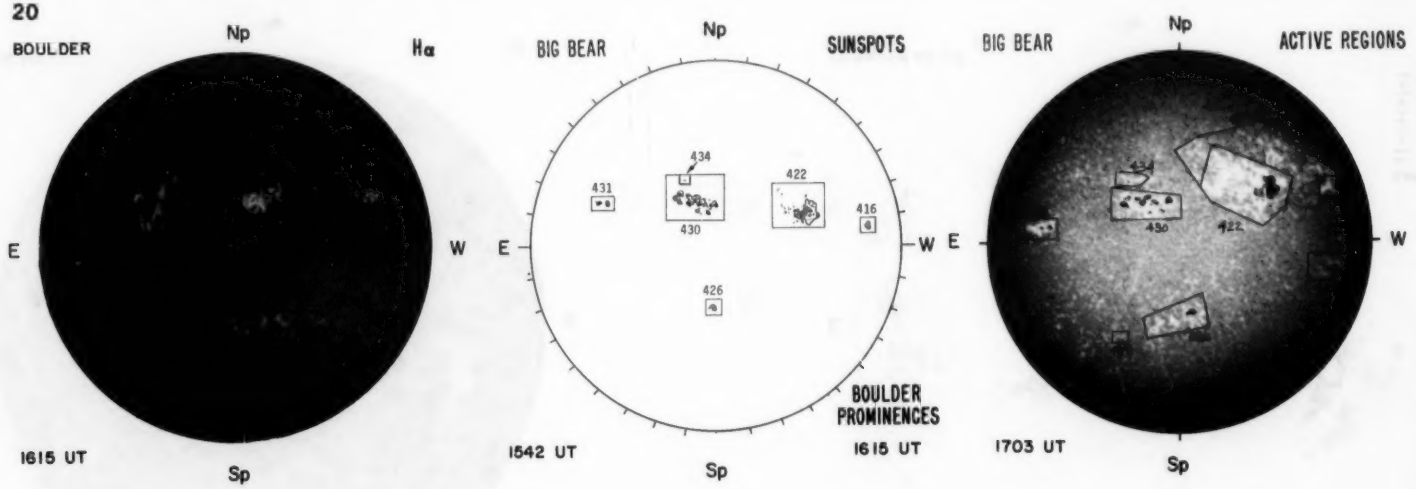
MT. WILSON MAGNETOGRAM
Solid - Plus
Dotted - Minus

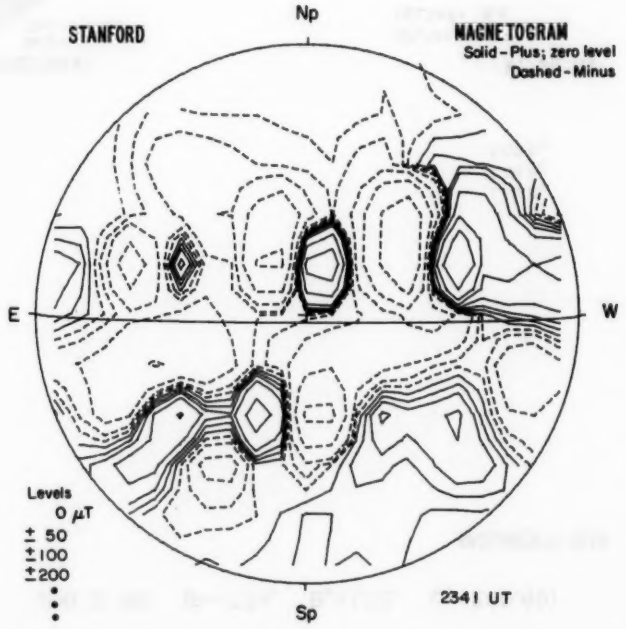
DELTAY =
DELTAX =

E NO DATA W

Levels
± 5
± 10
± 20
± 40
± 80

Sp


BOULDER
Np
Hα
E
W
Sp
1615 UT
BIG BEAR
Np
SUNSPOTS
434
422
431
416
430
426
E
W
1542 UT
Sp
BOULDER
PROMINENCES
1615 UT
BIG BEAR
Np
ACTIVE REGIONS
430
422
E
W
1703 UT
Sp


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
± 100
± 200
2341 UT
Sp

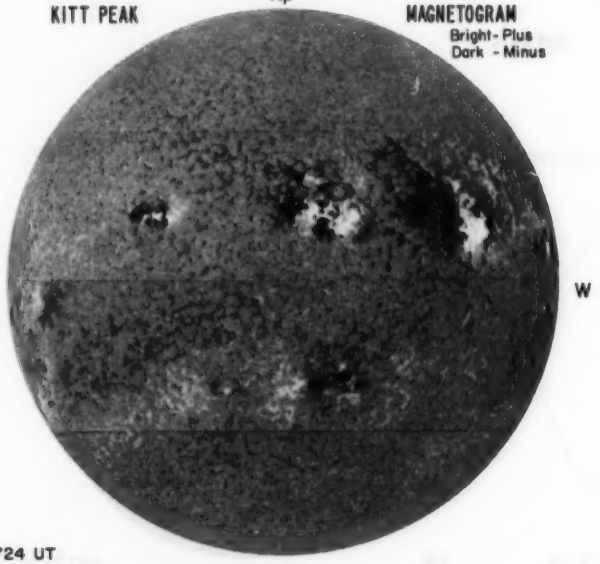
JUNE 21, 1982 (P=-7.34, B_o=1.72, L_o=280.49)

SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

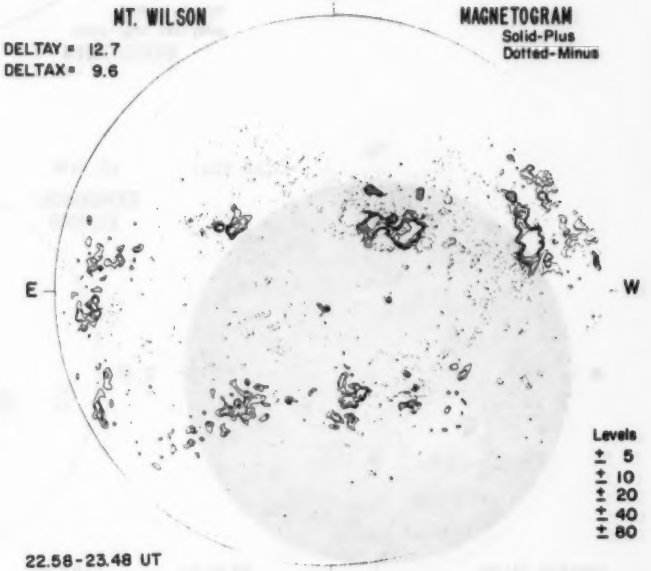
1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

KITT PEAK



1724 UT

Sp
Np
MT. WILSON
DELTAY = 12.7
DELTAX = 9.6



22.58-23.48 UT

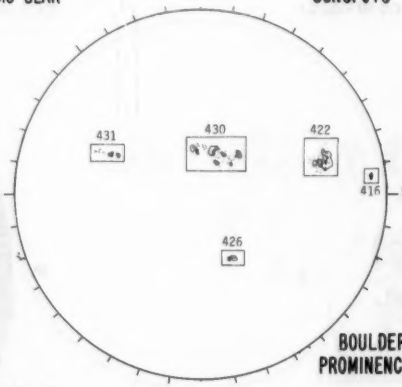
Sp

BOULDER Np Hα

E W

1532 UT Sp

BIG BEAR Np SUNSPOTS



E W

1525 UT Sp

BOULDER PROMINENCES

1532 UT

BIG BEAR Np ACTIVE REGIONS

E W

2216 UT Sp

STANFORD Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E NO DATA W

Levels
0 μT
± 50
±100
±200

Sp

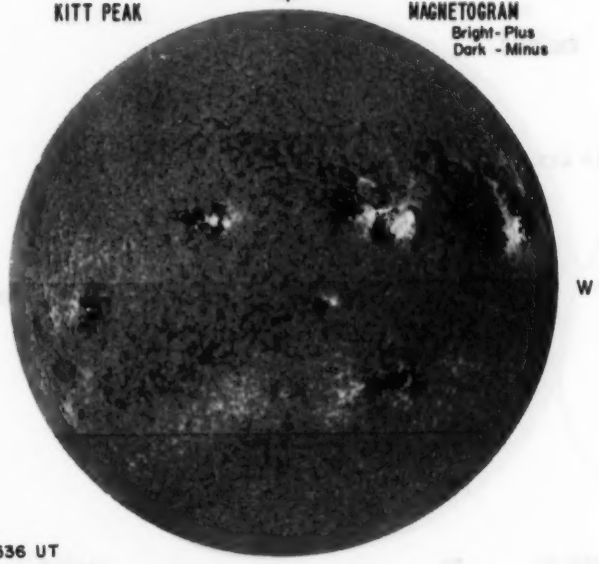
JUNE 22, 1982 (P=-6.90, B_o=1.84, L_o=267.25)

SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

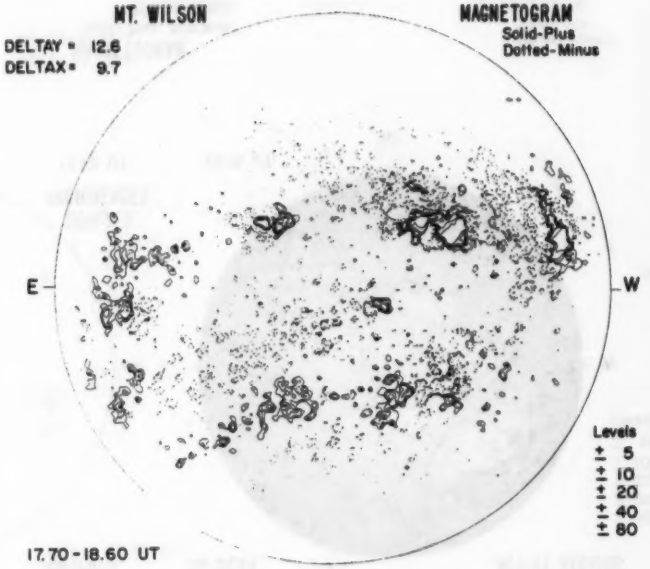
1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

KITT PEAK MAGNETOGRAM
Bright-Plus
Dark - Minus



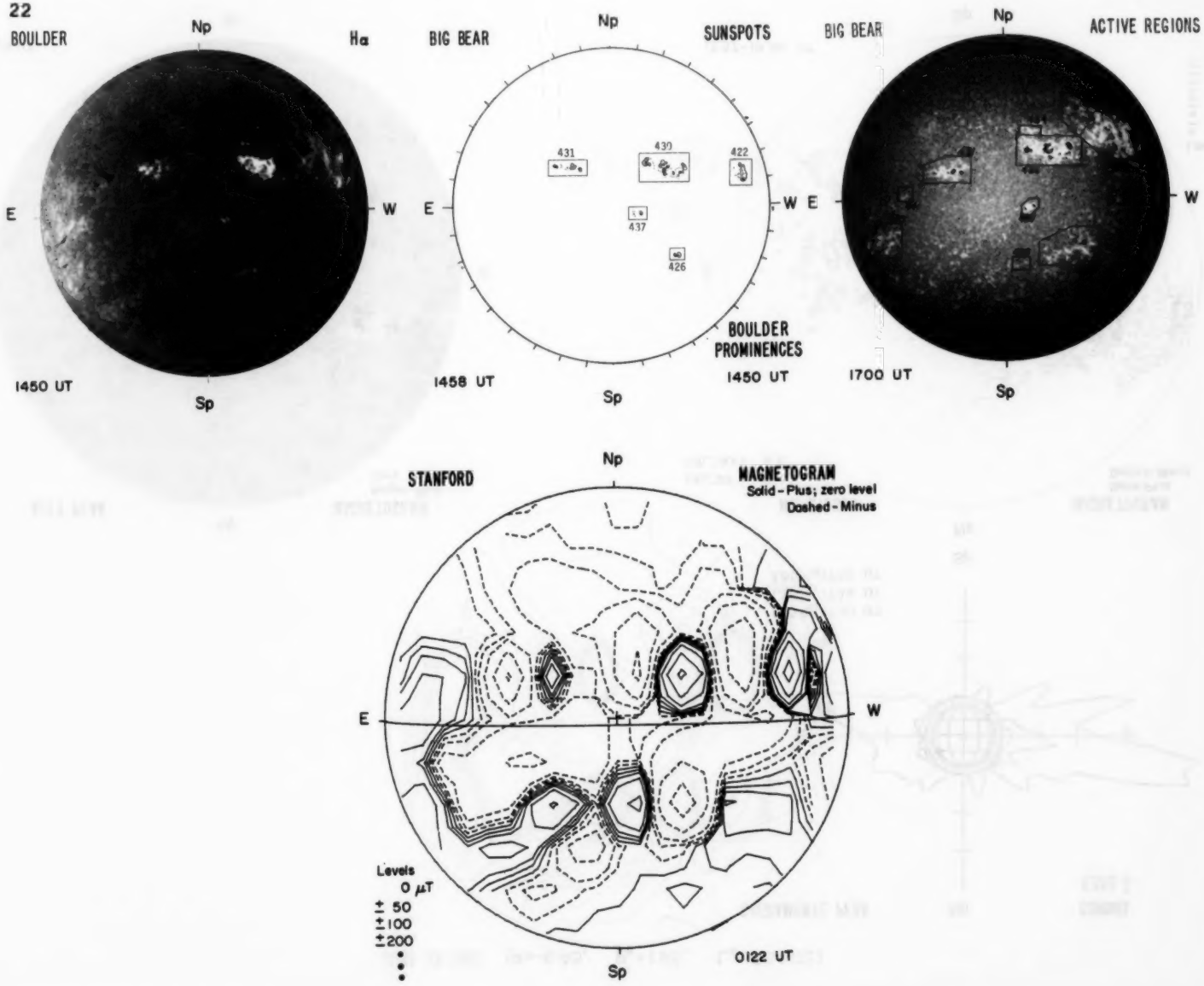
1536 UT

MT. WILSON MAGNETOGRAM
Solid-Plus
Dotted-Minus
DELTAY = 12.6
DELTAX = 9.7



17.70-18.60 UT

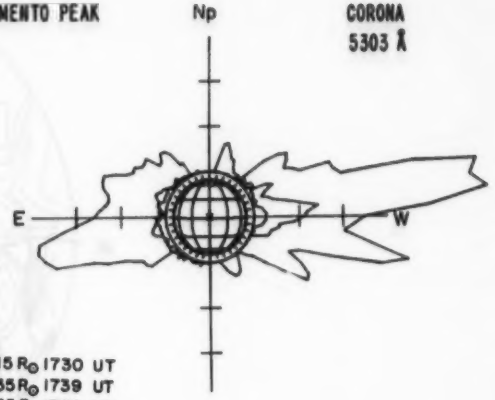
22


BOULDER
Np
Hα
E
W
Sp
1450 UT
BIG BEAR
Np
SUNSPOTS
431
439
422
437
426
E
W
BOULDER
PROMINENCES
1458 UT
1450 UT
Sp
BIG BEAR
Np
ACTIVE REGIONS
E
W
1700 UT
Sp
STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
0122 UT
Sp

JUNE 23, 1982 (P=-6.45, B_o = 1.96, L_o = 254.02)

SACRAMENTO PEAK

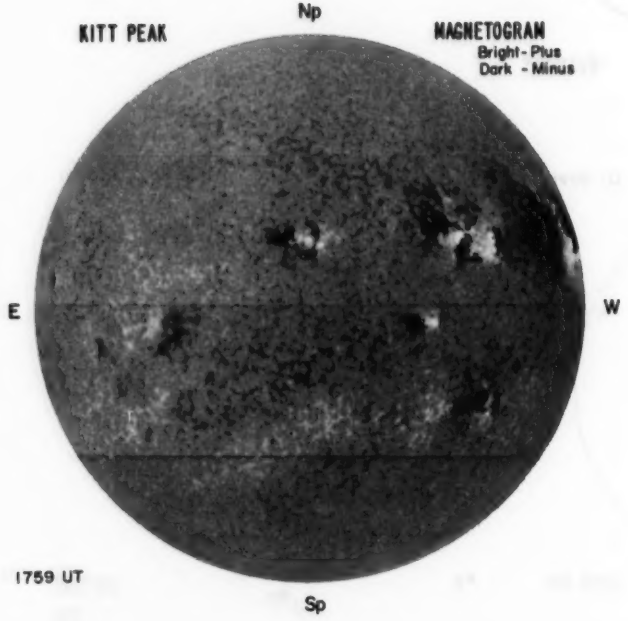
CORONA
5303 Å



1.15 $R_\odot$ 1730 UT
1.35 $R_\odot$ 1739 UT
1.55 $R_\odot$ 1750 UT

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

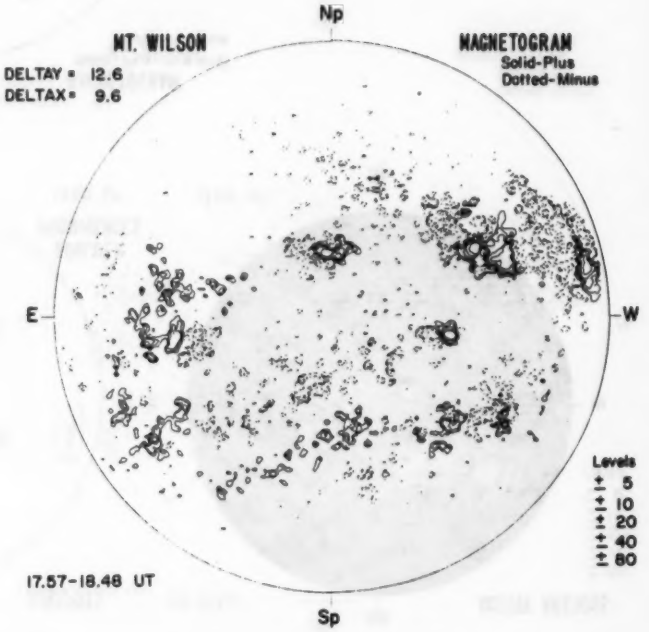


1759 UT

MT. WILSON

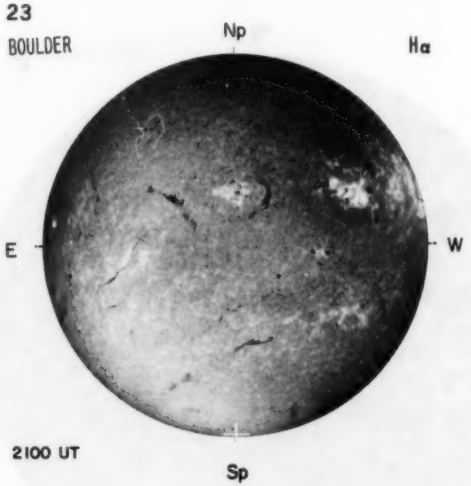
DELTAY = 12.6
DELTAX = 9.6

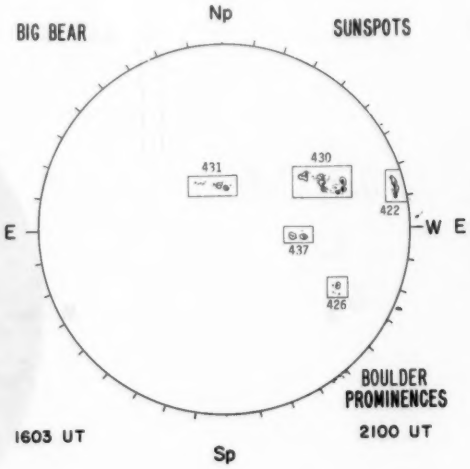
MAGNETOGRAM
Solid-Plus
Dotted-Minus



17.57-18.48 UT

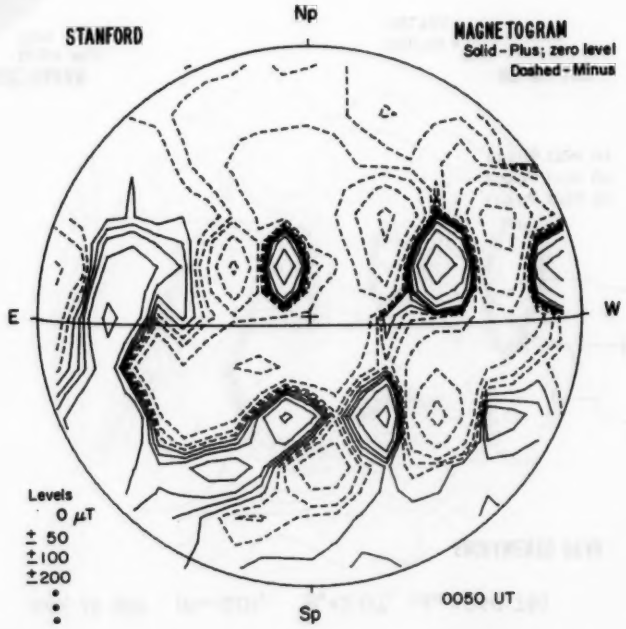
23


BOULDER
Np
Hα
E
W
Sp
2100 UT


BIG BEAR
Np
SUNSPOTS
431
430
422
437
426
E
W
Sp
1603 UT

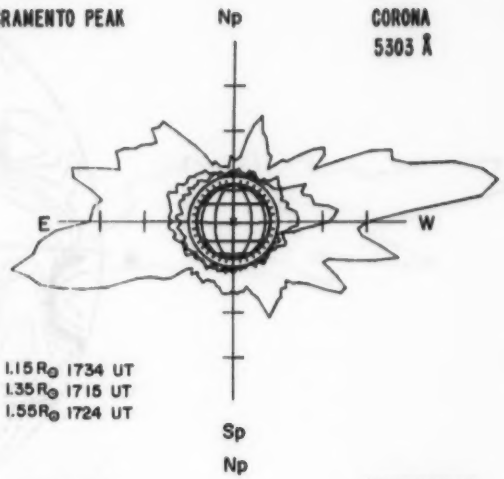
BOULDER
PROMINENCES
2100 UT

BIG BEAR
Np
ACTIVE REGIONS
E
W
Sp
1540 UT


STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
Sp
0050 UT

JUNE 24, 1982 (P=-6.01, B_o=2.07, L_o=240.78)

SACRAMENTO PEAK

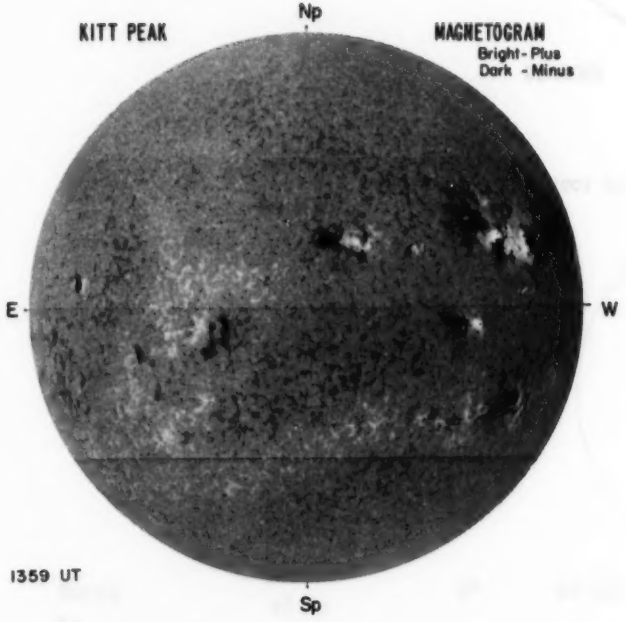


CORONA
5303 Å

1.15 $R_\odot$ 1734 UT
1.35 $R_\odot$ 1715 UT
1.55 $R_\odot$ 1724 UT

Np

KITT PEAK

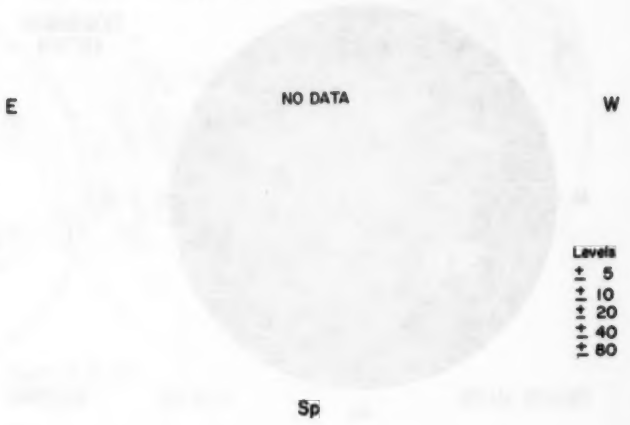


MAGNETOGRAM
Bright - Plus
Dark - Minus

1359 UT

MT. WILSON

DELTAY =
DELTAX =



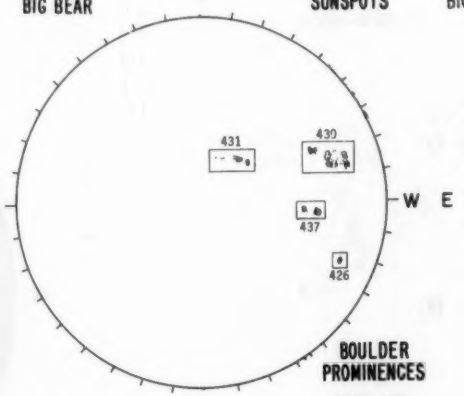
MAGNETOGRAM
Solid-Plus
Dotted-Minus

Levels
± 5
± 10
± 20
± 40
± 80

SACRAMENTO PEAK Hα

1456 UT

BIG BEAR SUNSPOTS BIG BEAR



BOULDER PROMINENCES

1535 UT 1402 UT

ACTIVE REGIONS

Np

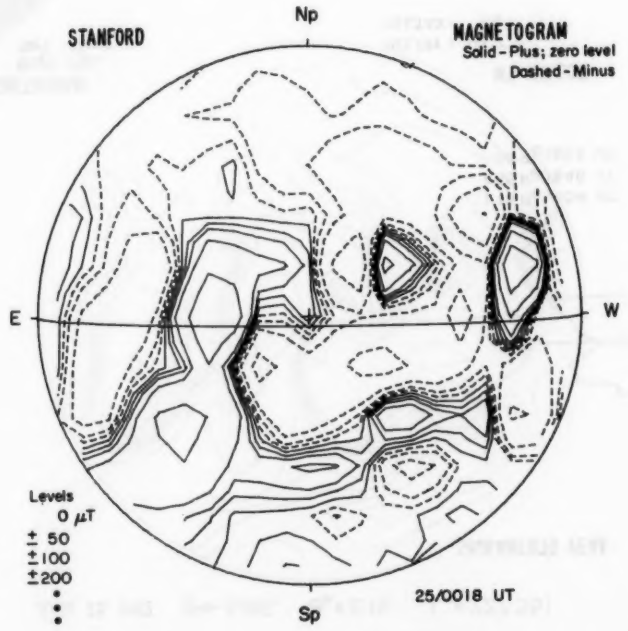
NO DATA

W

Sp

STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus

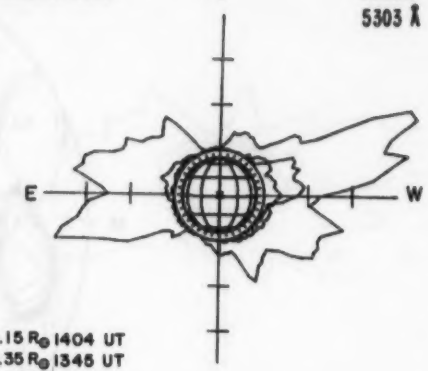


25/0018 UT

JUNE 25, 1982 (P=-5.56, B_o=2.19, L_o=227.55)

SACRAMENTO PEAK

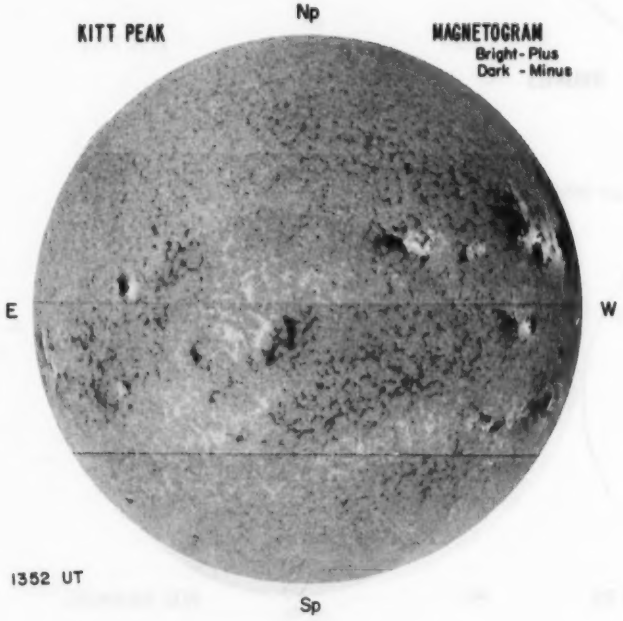
CORONA
5303 Å



1.15 $R_\odot$ 1404 UT
1.35 $R_\odot$ 1345 UT
1.55 $R_\odot$ 1354 UT

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus

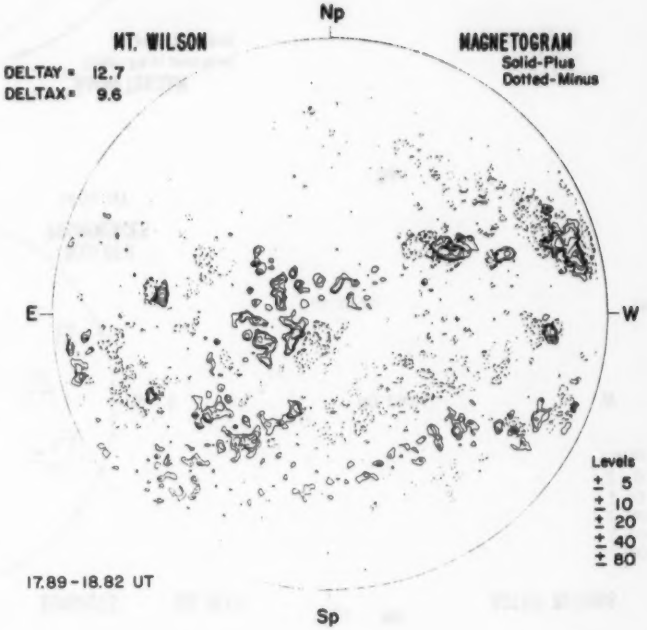


1352 UT

MT. WILSON

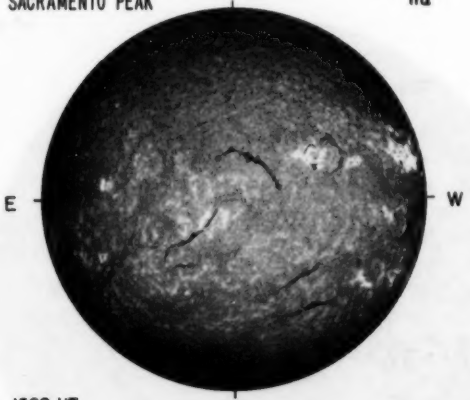
DELTAY = 12.7
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus



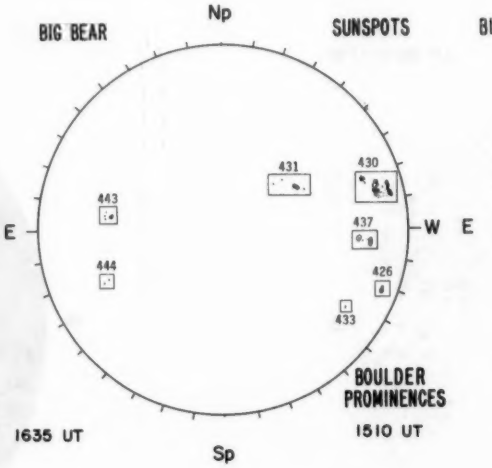
17.89 - 18.82 UT

SACRAMENTO PEAK Hα



1508 UT

BIG BEAR SUNSPOTS

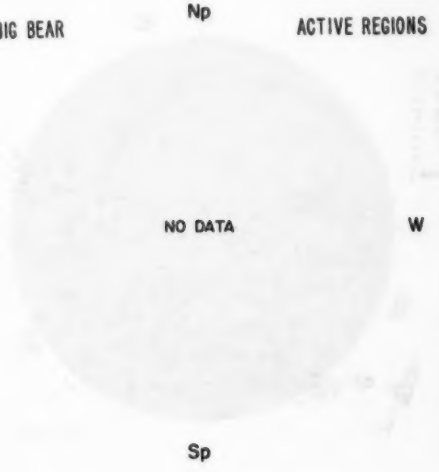


1635 UT

BOULDER PROMINENCES

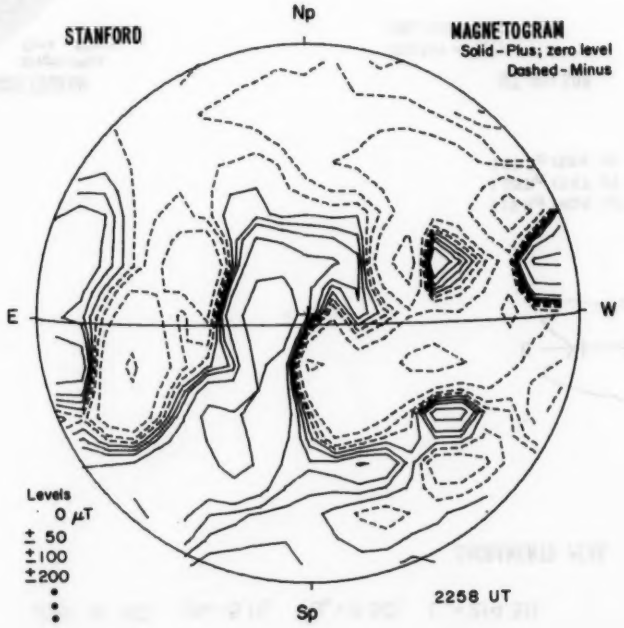
1510 UT

BIG BEAR ACTIVE REGIONS



STANFORD MAGNETOGRAM

Solid - Plus; zero level
Dashed - Minus



2258 UT

JUNE 26, 1982 (P= -5.11, B_o= 2.30, L_o= 214.31)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

W

1.15 $R_\odot$ 1406 UT
1.35 $R_\odot$ 1347 UT
1.55 $R_\odot$ 1356 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

E

W

1423 UT

Sp

MT. WILSON

Np

DELTAY = 12.7
DELTAX = 9.6

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

W

Levels
± 5
± 10
± 20
± 40
± 80

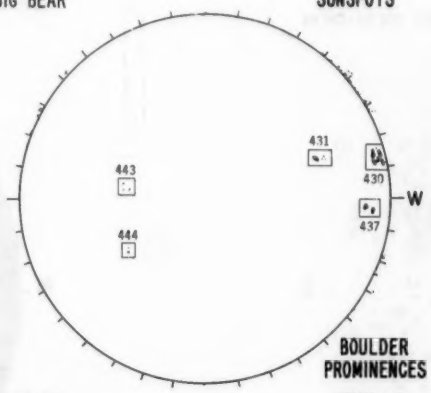
15.11-16.00 UT

Sp

SACRAMENTO PEAK Hα

1444 UT

BIG BEAR SUNSPOTS



1525 UT

BOULDER PROMINENCES

1340 UT

BIG BEAR ACTIVE REGIONS

1641 UT

STANFORD MAGNETOGRAM

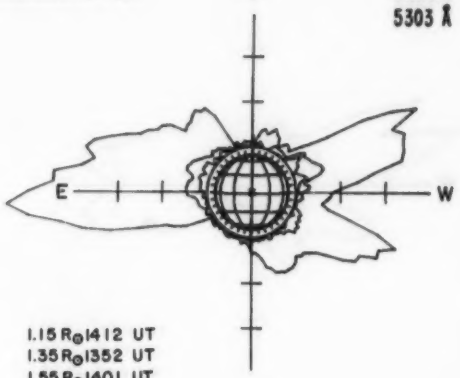
Solid - Plus; zero level
Dashed - Minus

JUNE 27, 1982 (P=-4.66, B_o= 2.42, L_o=201.07)

SACRAMENTO PEAK

Np

CORONA
5303 Å



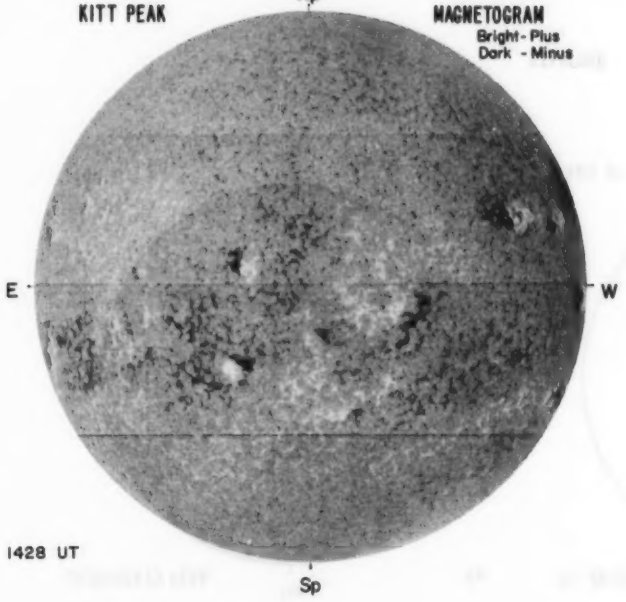
1.15 $R_\odot$ 1412 UT
1.35 $R_\odot$ 1352 UT
1.55 $R_\odot$ 1401 UT

Sp

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus



1428 UT

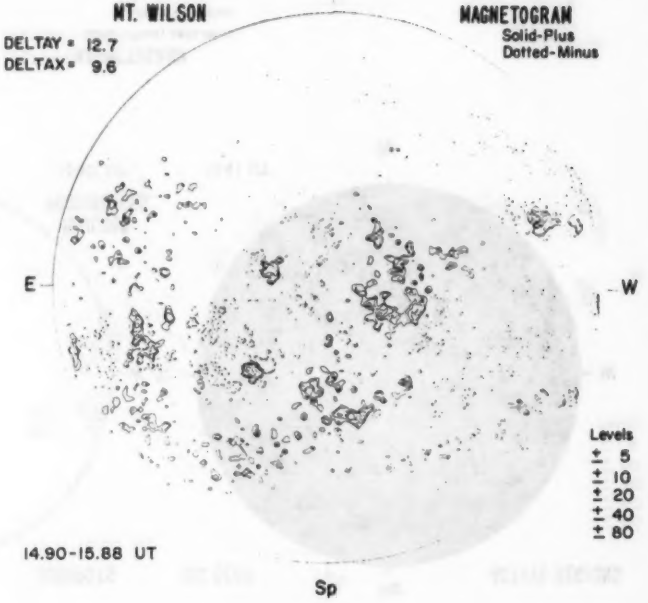
Sp

MT. WILSON

DELTAY = 12.7
DELTAX = 9.6

Np

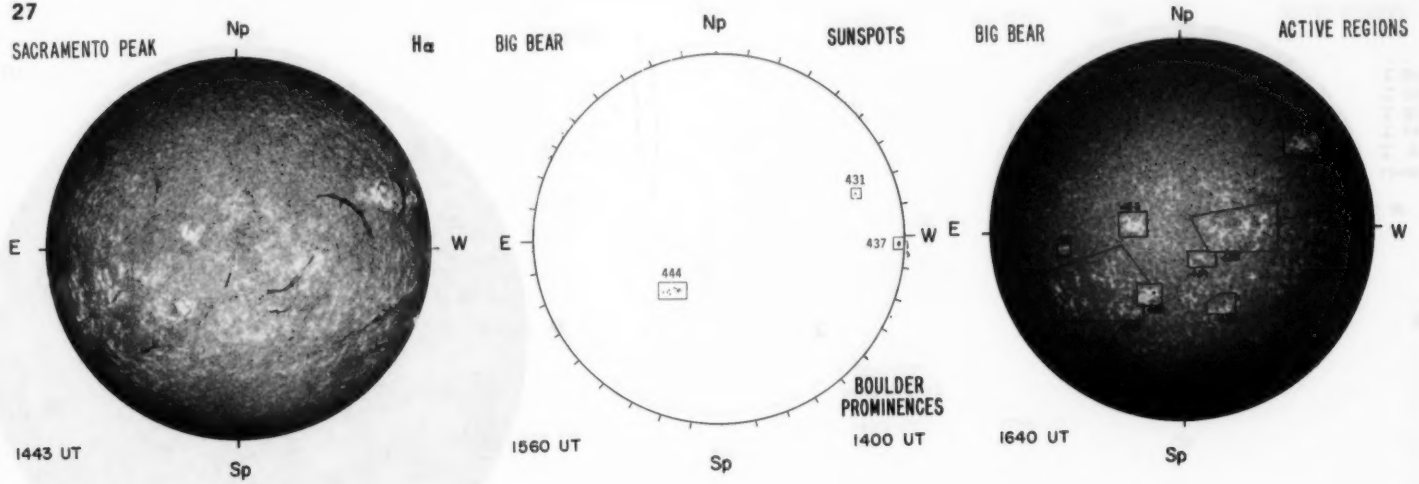
MAGNETOGRAM
Solid-Plus
Dotted-Minus

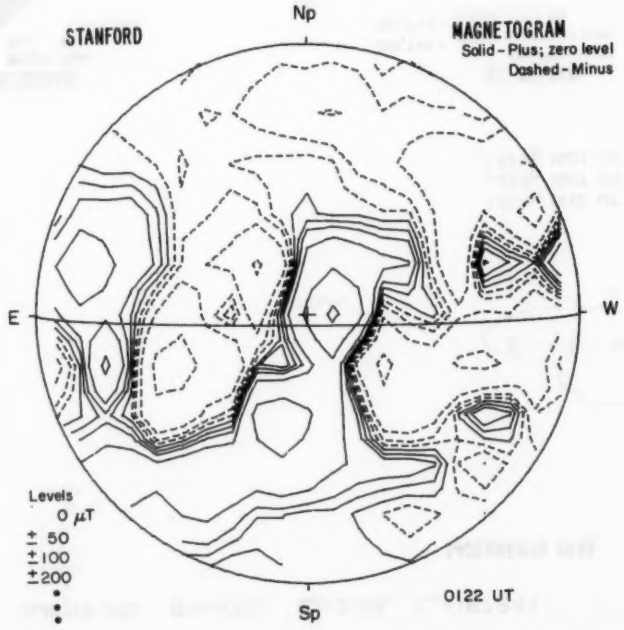


14.90-15.88 UT

Sp

27


SACRAMENTO PEAK
Np
Hα
1443 UT
E
W
Sp
BIG BEAR
Np
SUNSPOTS
431
437
444
E
W
1560 UT
Sp
BOULDER PROMINENCES
1400 UT
BIG BEAR
Np
ACTIVE REGIONS
E
W
1640 UT
Sp

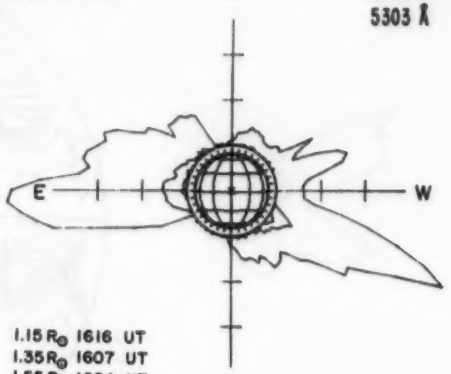

STANFORD
Np
MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus
E
W
Levels
0 μT
± 50
±100
±200
0122 UT
Sp

JUNE 28, 1982 (P=-4.21, B_o=2.53, L_o=187.84)

SACRAMENTO PEAK

Np

CORONA
5303 Å



1.15 $R_\odot$ 1616 UT
1.35 $R_\odot$ 1607 UT
1.55 $R_\odot$ 1624 UT

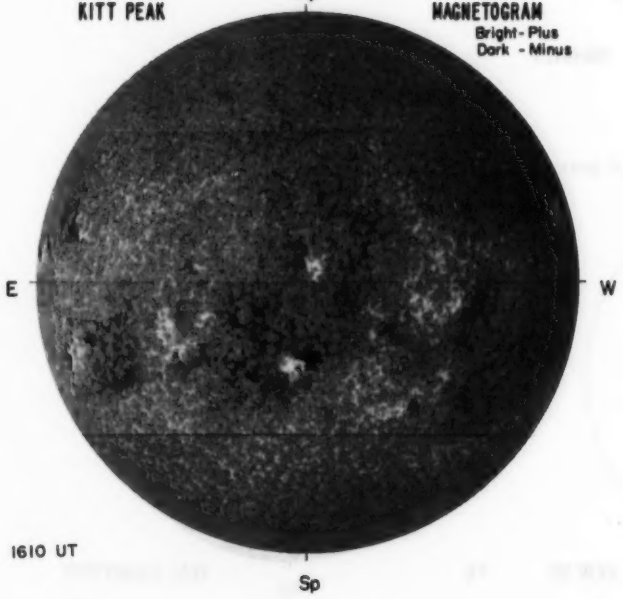
Sp

Np

KITT PEAK

Np

MAGNETOGRAM
Bright - Plus
Dark - Minus

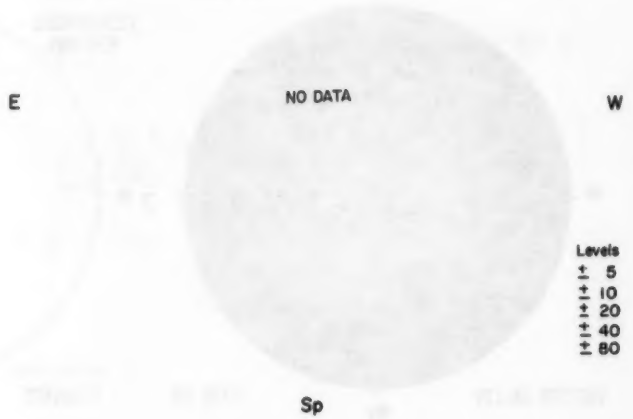


1610 UT

MT. WILSON

DELTAY =
DELTAX =

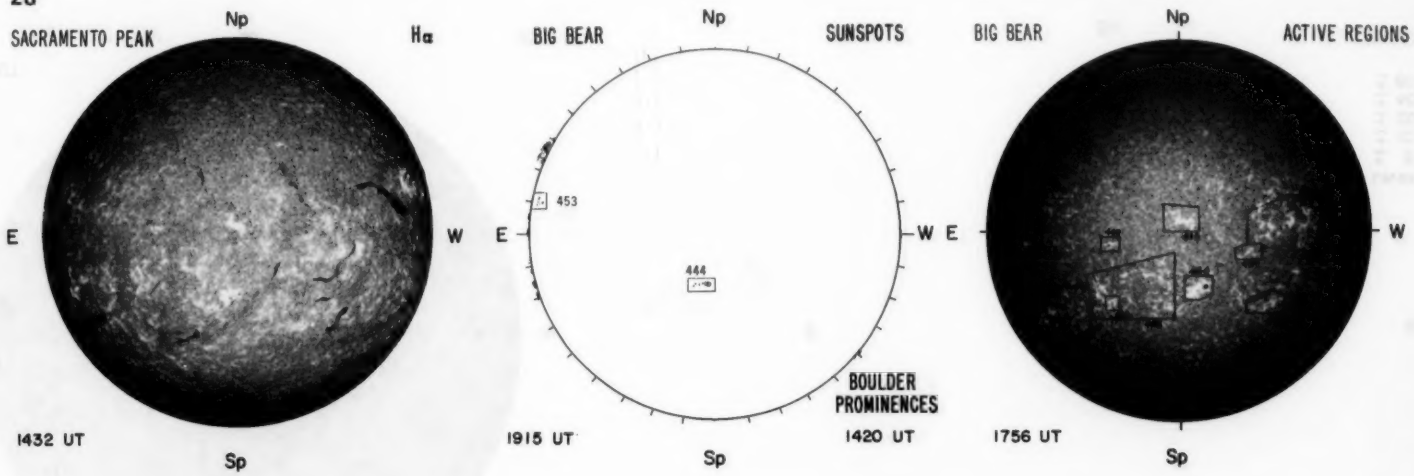
MAGNETOGRAM
Solid - Plus
Dotted - Minus



Np

ACTIVE REGIONS

28



STANFORD

Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E NO DATA W

Levels
0 μT
± 50
± 100
± 200
• • •

Sp

JUNE 29, 1982 (P=-3.75, B_o=2.64, L_o=174.60)

SACRAMENTO PEAK

Np

CORONA
5303 Å

E

NO DATA

W

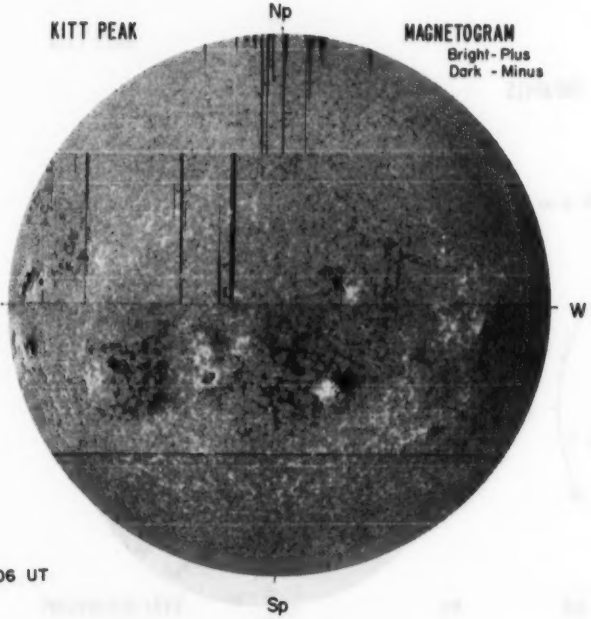
1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

Np

KITT PEAK

MAGNETOGRAM
Bright - Plus
Dark - Minus



1506 UT

MT. WILSON

DELTAY =
DELTAX =

MAGNETOGRAM
Solid-Plus
Dotted-Minus

E

NO DATA

W

Levels
± 5
± 10
± 20
± 40
± 80

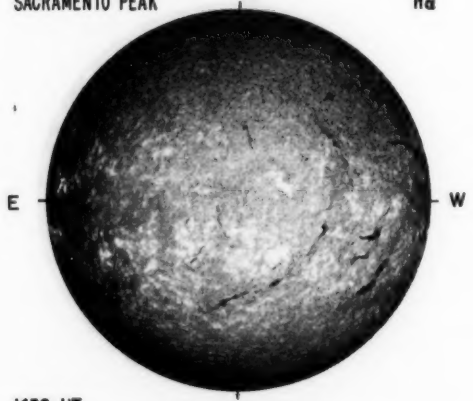
Sp

Np

ACTIVE REGIONS

29

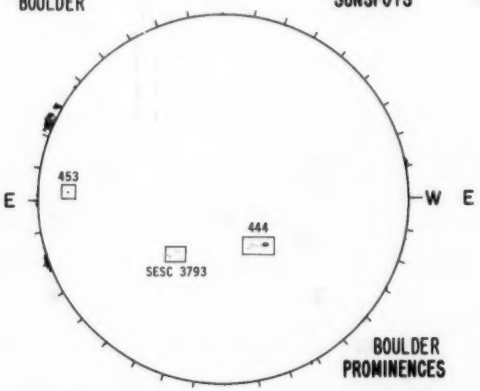
SACRAMENTO PEAK



1430 UT

Hα

BOULDER



1430 UT

SUNSPOTS

BIG BEAR

ACTIVE REGIONS

BOULDER PROMINENCES

1448 UT

STANFORD

MAGNETOGRAM

Solid - Plus; zero level

Dashed - Minus

JUNE 30, 1982 (P=-3.30, B_o = 2.75, L_o = 161.36)

SACRAMENTO PEAK Np CORONA 5303 Å

E NO DATA W

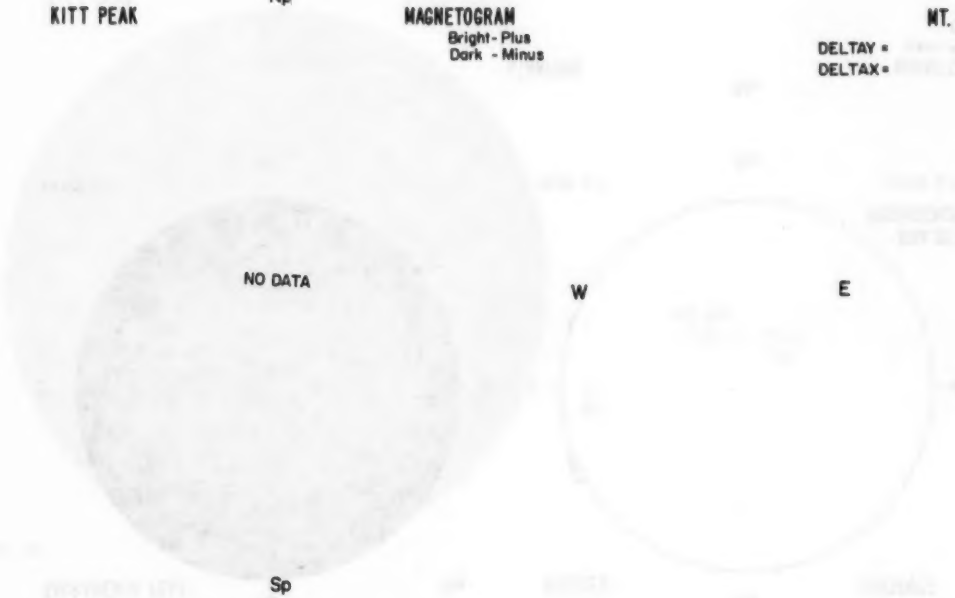
1.15 $R_\odot$
1.35 $R_\odot$
1.55 $R_\odot$

Sp

Np

KITT PEAK Np MAGNETOGRAM Bright - Plus Dark - Minus

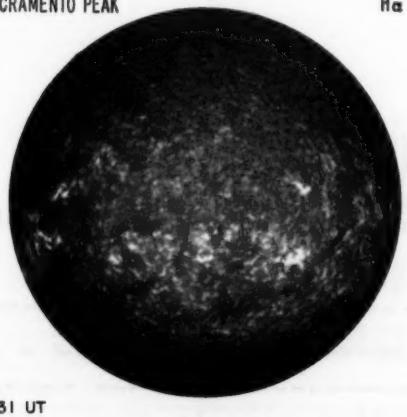
NT. WILSON DELTAY = DELTAX = MAGNETOGRAM Solid-Plus Dotted-Minus



Levels
± 5
± 10
± 20
± 40
± 80

30

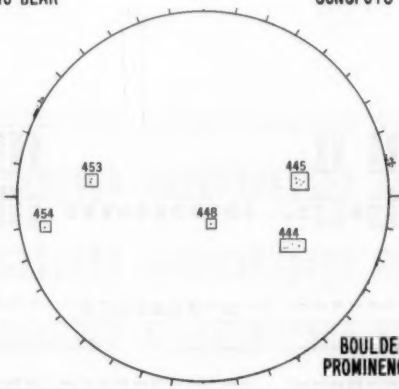
SACRAMENTO PEAK Np Hα



E W

1931 UT Sp

BIG BEAR Np SUNSPOTS



E W

2335 UT Sp

BIG BEAR Np ACTIVE REGIONS

NO DATA

E W

1510 UT Sp

BOULDER PROMINENCES

STANFORD Np

MAGNETOGRAM
Solid - Plus; zero level
Dashed - Minus

E NO DATA W

Levels
0 μT
± 50
±100
±200

Sp

117
Jun 82

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1982

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
01	0655	0820	0704	1-	5	1		2	2	1	1		NF	
01	1702	1742	1711	1-	3				1		4		*	
01	1750	1830	1801	1-	3				1		5		1742	18395
02	0044	0306	0110	1	3				1	1	1		NF	
02	0700	0810	0714	1-	3				1	2	1		0700E	18396
02	0851	0930	0909U	1	1			1					0845	18401
02	1540	1735	1555	3+	5	5		2	2	1	18		1543	18405
02	1648	1656	1649	1-	1						1		1643	18403
02	1901	1930	1910	1	3						3		NF	
03	0045	0120	0054	1-	3				1	1	1		0043E	18401
03	0218	0243	0222	1-	3				1	1			02115	18405
03	0254	0323	0300	2	3						2		NF	
03	0320	0442	0332	2+	5	1			2	1	5		0323	18405
03	0450	0528	0459	1-	3				1	1	1		0447	18405
03	0559	0630	0604	1-	3				1	1			0601E	18405
03	0833	1028	0848	3	5	4		4	1	1	2		0830	18405
03	1141	1326	1149	3+	5	4		3	1		15		1141	18405
03	1436	1500	1442	1-	3						2		1436	18405
03	1506	1600	1518	3+	5	4		4	1	1	16		1500	18405
03	1737	1838	1742	1-	5					1	12		1731	18404
03	2128	2232	2134	1-	5	1			1		4		2124	18405
03	2249	2322	2300	1-	1				1				2250	18405
04	0014	0158	0033	2+	5	2			2	1	6		0015E	18405
04	0247	0406	0307	2	5	1			1	1	4		0257	18405
04	0430	0730	0516	2+	3				2	1	5		NF	
04	0502	0631D	0519	3+	5	4		4	1	1	4		0510	18405
04	0631E	0740	0636	2+	5	2		1	1	1	6		0633E	18405
04	0752	0827	0759	1-	3			1	1	1	1		NF	
04	0859	1034D	0936	2+	5	4							*	
04	0925	0948	0944	1	3	1		1			1		*	
04	1034E	1157	1042	2	5	2		4	1		1		NF	
04	1313		1333	3+	5	4		1	1	1	16		NF	
04	1322	1419D	1332	2	5	2		2	1		5		NF	
04	1419E	1523	1426	1+	5			2	1	1	14		NF	
04	1512	1530	1516	1-	5				1		10		NF	
04	1652	1835	1759	2+	5	4			2	1	14		NF	
04	1838	1907	1846	1-	5	1			1		10		NF	
04	1912	2022	1927	1	5	5			2		13		NF	
04	2028	2115	2036	1-	5	1			2		14		NF	
04	2117	2244	2132	1-	3	1			1		10		NF	
04	2244	2354	2253	1-	3	1			1		7		NF	
05	0010	0122	0038	1	3				1	1	2		0012	18405
05	0125	0228D	0132	3	5	2			2	1	9		0127E	18405
05	0228E	0249D	0236	2+	3	1			1	1	4		0232E	18405
05	0249E	0309D	0257	2+	3	1			1		4		NF	
05	0309E	0416D	0323	3+	3	1			1		4		NF	
05	0416E	0504D	0420	2+	5	2			1		5		*	
05	0502E	0604	0511	1-	3				1		3		0512E	18405
05	0615	0726D	0623	3	5	4		3	1	2	6		0615	18405
05	0726E	0735	0729	2+	5	4		4	1	1	7		0729	18405
05	1030	1100	1035	1-	3	1		4	1	1	3		*	
05	1108	1200	1118	1-	3	1		1	1	1	3		*	
05	1205	1230	1209	1+	5	3		1	1	1	13		*	
05	1428	1445	1436	1-	3	1			1		5		*	
05	1528	1623	1531	1+	5				1	1	15		NF	
05	1721	1841	1741	1-	3	2			1		11		1721	18405
05	1852	1915	1900	1-	3						3		1852	18405
05	1928	1944	1930	1-	3	1			1		11		1904	18405
05	2003	2048D	2017	1+	5	1			2		12		NF	
05	2048	2115	2054	1+	5				2		13		NF	
05	2318	0038	2324	1-	5	3			2		7		2318E	18405
06	0210	0252	0223	1-	3				2	1	1		0216E	18405
06	0255	0413D	0315	2+	3	1			1	1	2		0250	18405
06	0507	0620	0533	1-	3				1	1	1		0507	18405
06	0640	0805	0700	1+	3			2			1		0636	18405
06	0912	0940	0920	1-	3	2			2	1	2		0914	18405
06	0950	1012	0954	1-	3				1		2		*	
06	1025	1054	1032	1-	3	1		1	2	1	3		*	
06	1107	1200	1115	1-	3	1			2		2		*	
06	1249	1300	1253	1	3	1			1	1	3		NF	
06	1326	1415	1330	1	5	3			2	1	14		1341E	18405
06	1421	1521	1434	1-	5	5			2	1	16		1424	18405
06	1628	1735	1636	1	5	5			1	1	16		1630E	18405
06	2234	2342	2247	1-	3	1			1		4		NF	

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1982

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
07	0104	0147	0118	1-	1					1			0106	18405
07	0823	1106	0834	2+	5	4		4	1	2	5		0821	18405
07	1147	1207	1152	1-	3				1		3		NF	
07	1250	1430	1258	1	5	3		2	1	1	8		1241E	18405
07	1335	1400	1342	1-	5	3			1		9		*	
07	1605	1645	1611	2+	5	5			1	1	17		1603	18405
07	1646	1722	1654	1-	5	5		4	2	1	12		1628	18405
07	1809	1832	1814	1-	3	1			2		11		1808	18405
07	2119	2208	2128	1-	3				1		7		2117	18405
08	0142	02580	0159	1-	3	1			1	1			0133	18405
08	0300E	0423	0310	1	3				1	1	1		*	
08	0552	0620	0557	1	3	1		1	1	1			0555E	18405
08	0626E	0724	0637	1-	3				1	2			0624	18411
08	1420	1450	1434	1-	5	1		1	1	1	4		*	
08	1801	1845	1803	1-	3				1		11		1802E	18405
08	2002	2110	2008	1-	3				1		11		2004E	18405
08	2219	2236	2223	1-	1				1				2220	18411
08	2338	0130	2348	2+	5	3			2	1	10		2337	18405
09	0230	0322	0245	1-	3				2	1	3		0233E	18413
09	0724	0920	0737	2	3	4		2	2	2	4		0726	18405
09	1126	1220	1134	1	5	3		1	2	1			*	
09	1230	1400	1235	1+	3			1			8		NF	
09	1835	1900	1836	1	1						1		1836	18414
09	2220	00580	2254	2	5	2			1		9		2220	18405
09	2325	2355	2330	1	3						4		2327	18405
10	0057	0214	0106	2+	3	2			2		2		0055	18405
10	0212	02470	0220	1	3				2		4		0216E	18405
10	0249	0330	0252	1-	3				1	1	3		0251E	18405
10	0428	04480	0429	1-	3				1	1	1		0427E	18405
10	0448E	0542	0456	1-	3				1		1		0450E	18405
10	0542	0815	0618	3+	5	2			1	2	1		0544E	18405
10	0604	0700	0618	2	5	3		2	1	2	8		0600E	18405
10	1135	1247	1150	1	5	3		1	1	1	7		1147E	18405
10	1309	1333	1313	1-	3				1		1		1309	18410
10	1502	1540	1510	1-	5	2		3	1	1	4		1501	18415
10	1654	1755	1712	1-	5	1		3	1	1	11		1713	18410
10	1835	1855	1841	1-	3				1		12		1835	18414
11	0225	0326	0234	2	5	1			2		4		*	
11	0333	0432	0356	1-	3				1		3		NF	
11	0640	0952	0704	2+	5	4		3	2	1	5		0643	18405
11	1108	1130	1113	1-	5	1		3	2	1	3		NF	
11	1459	1540	1505	2	5	4		3	2		12		1456	18405
11	1837	1940	1852	1-	3	1			1		11		1821	18405
11	2118	2140	2126	1-	1				1				2118	18405
11	2300	2328	2309	1-	3				1		1		*	
11	2328	0016	2334	2	5	1			2		10		NF	
12	0026	0103	0038	1-	3				1	1	2		NF	
12	0150	02260	0158	1+	3	1			1	1	4		*	
12	0226E	0333	0240	2+	3	1			1	1	3		*	
12	0502	0817	0534	3+	5	4		3	2	1	4		0512	18422
12	0827	0930	0838	1	5	2			1	2	3		NF	
12	0952	1011	0957	1-	3	1		4	1	1			*	
12	1019	11120	1040	1	5	3		1	1	1	2		*	
12	1112	1200	1119	1-	5	4		1	2	1	10		*	
12	1301	1350	1310	1-	5	2		1	1	1	13		1302	18415
12	1433	1450	1437	1-	3				1	5			NF	
12	1455	1530	1506	1-	5	1		1	1	1	11		1454	18422
12	1537	1623	1543	1-	1				1				1536	18422
12	1613	1700	1630	2+	5	3		1	1	1	13		1613	18422
12	1737	1815	1750	1-	3				1		14		1736	18422
12	1818	1852	1837	1	3				1		12		NF	
12	1852	2000	1904	1-	5	2			1		13		*	
12	2314	0118	2358	1-	1				1				2314	18405
13	0036	0103	0040	1-	1					1			0036	18410
13	0151	03220	0212	1	3				1	1	2		*	
13	0450	0710	0510	2	3			1	1	2	1		0454	18422

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1982

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
13	0944	1130	0948	3+	5	4		3	1	2	6		*	
13	1133	1210	1138	1-	3				1		2		NF	
13	1402	1500	1405	1-	5	2		1	1	1	10		1403	18405
13	1622	1650	1627	1-	3				1		1		1630	18415
13	1816	1941	1829	2	5	2			1		17		1818	18421
13	1943	2005D	1947	1-	3				1		6		1942E	18405
13	2102	2145D	2113	1-	5	1			1		11		2102	18405
13	2145E	2316	2203	2+	5	2			1		12		2147	18405
13	2322	0028D	2340	2	3	3			1		7		2326	18421
14	0026	0100	0036	1-	3				1	1			0017E	18405
14	0102	0133	0108	1-	3				1	1			0101E	18422
14	0254	0324	0259	1-	3				1	1			0252	18422
14	0338	0354	0341	1-	1				1				0339	18422
14	0411	0455	0427	1	1				1				0412E	18405
14	0456	0550	0518	1	3	3		1		1	4		0457	18405
14	0622	0802D	0634	3+	5	4		4	1	1	3		0623	18422
14	0802E	1038	0835	2	3				1		2		0758	18405
14	1113	1210	1128	1-	3	1			1	1	1		*	
14	1223	1250	1232	1-	3	1		1	1	1	1		1213	18422
14	1309	1420	1321	2+	5	3		3	2	1	8		1258	18422
14	1441	1555	1454	1+	5	4		1	2	1	12		*	
14	1815	1921	1829	1-	3				1		12		1814	18146
14	1852	2030	1857	2+	1	1							1849	18416
14	2104	2202D	2118	1+	5					1	11		2104	18405
14	2203	2300	2211	1-	3					1	1		2205	18410
15	0030	0730	0248	3	5			2	1	6			0031	18405
15	0150	0216D	0200	1-	3				1		1		0154	18422
15	0216E	0448	0251	3+	3	2			1	1	4		0218E	18422
15	0602	0717D	0622	2+	5	1		3	1	1	3		0559	18405
15	0809	1000	0823	3	5	4		4	2		5		0806	18426
15	1019	1250	1028	3+	5	4		3	2	1	10		*	
15	1345	1408	1400	1-	3	2			1		6		1335	18422
15	1354	1503	1422	1	5	1		1	1	1	5		1355	18426
15	1410	1451	1423	2+	5	3		1	2	1	17		1423	18426
15	1510	1600	1516	2	5	5		4	2	1	12		1509	18426
15	1815	1915	1831	2+	3						6		NF	
15	2058	2235	2109	2+	5	3			2		10		2102E	18422
15	2239	2309	2250	1-	1				1				2238	18410
16	0204	0422	0222	3+	3	2			2		6		0209	18422
16	0253	0315	0301	2+	3	1					4		NF	
16	0501	0612	0512	1-	3				2		1		NF	
16	0704	0751	0731	1	3			1			1		0710E	18422
16	0723	0755	0739	1-	3			1	1	1			0721	18422
16	1142	1155	1147	1-	3					1	1		1145E	18422
16	1503	1540	1511	1-	5	1		3	1	1	9		1458	18426
16	1636	1715	1645	1	3	1					7		1626	18421
16	1640	1759	1650	1-	5	2		3	1	1	8		*	
16	1951	2029	2000	1-	3				1		5		1950	18422
16	2029	2245	2045	2	5	2			1		8		2030E	18422
16	2340	2350	2347	2	3	3			2		4		2339	18421
17	0242	0404	0250	3	3	1			2		5		0238	18422
17	0416	0514	0424	1-	3				1		3		NF	
17	0619	0706	0623	1-	5	1		4	2	1	2		NF	
17	1048	1214	1057	2+	5	3		2	2	1	12		1052E	18422
17	1339	1440	1344	1+	5	3		3	2	1	13		1339E	18422
17	1621	1640	1625	1-	3			1	1	1	5		1622	18422
17	1837	1926	1841	1-	3	1			1		7		1835	18422
18	0148	0324	0204	1	3				2		4		0200E	18431
18	0423	0513	0435	1-	3			2	2		3		0427E	18431
18	0548	0621	0600	1-	1				1				0546	18426
18	0758	0838	0817	1-	1				1				0751	18431
18	0947	1034	0955	1	5	3		3	1	1	4		*	
18	1103	1140	1115	1-	3	2		2		1	5		*	
18	1514	1550	1525	1-	1			1	1	1	10		1513	18422
18	1628	1700	1636	1-	5	2		1	1	1	10		*	
18	1701	1740	1706	1-	3				1		5		*	
18	2138	2313	2152	2	5	3			1		11		2138	18421

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1982

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
19	0009	0155	0051	1-	3				1	1	2		0006	18422
19	0048	0157	0056	1	3	1			1		7		0048	18422
19	0257	0336	0306	1-	1				1		1		0249	18422
19	0504	0527	0510	1-	1				1				0502	18422
19	0752	0824	0756	1-	3	1		1	1	1	1		0750	18422
19	0826	1005	0841	1	3			1	1	1	3		0825	18422
19	1326	1406	1335	1-	3				1		5		1330E	18422
19	1520	1602	1530	1-	5	1		1	1	1	8		1517	18431
19	1645	1720	1646	1-	3				1		13		1649	18422
19	1718	1811	1725	1-	5	2		1	1		15		1719	18422
19	1917	1947	1945	1-	3	1			1		2		1919	18422
19	1949	2055	2003	1	5	2			2		12		1941	18430
19	2144	2220	2152	1-	3				1		1		2143	18430
20	0021	0350	0202	2+	3				2		4		0020	18430
20	0113E	0149	0116	1	3	1			1		4		0113	18422
20	0149	0253D	0211	3+	3	2			1	1	7		0151	18422
20	0253E	0352	0256	1	3	1			1		2		0252	18422
20	0401	0454D	0407	2	3	1			2		1		0400	18422
20	0633	0754	0641	2	5	4		2	2	2	4		0633	18422
20	1102	1120	1111	1-	3	1		1	1	1			*	
20	1200	1250	1208	1	5	3		2	2	1	8		1209E	18430
20	1705	1812	1720	1	5	5		1	1	1	9		1712E	18430
20	2041	2148	2052	1-	5				2		11		2041E	18430
20	2223	0042	2237	2+	5	3			1		14		2224	18430
21	0110	0246	0130	2+	3	1			1	1	3		0110	18430
21	0124	0200	0130	1+	3	2							0120	18430
21	0246	0325D	0256	2	3	1			1	1	2		0244	18430
21	0350	0425	0358	1-	3	1					1		0350	18430
21	0450	0540	0505	1+	5	2			1	2	3		0452E	18430
21	0611	0635	0620	1-	3	1		2	1	2			0610	18430
21	0742	0816	0750	1-	3				1	1	1		0742	18430
21	0825	0840	0830	1-	3				1	1	1		0822	18430
21	0911	0940	0918	1-	3	1		1	1	1	1		0908	18430
21	1114	1255	1140	2	5	3		3	2	1	4		*	
21	1320	1420	1323	1-	3				1		1		1323	18431
21	1610	1745	1620	2+	5	5		3	2	1	16		1607	18430
21	1751	1843	1754	1+	3						2		1746	18431
21	2213	2258D	2234	2	3	1			1		11		2214	18430
21	2300	0221	2307	1	5	2			2		15		2305E	18430
22	0003E	0124D	0016	1	3				1	1	5		0011E	18430
22	0123	0204	0134	1-	3				1	1	5		0125	18431
22	0246	0330	0300	1-	3				1	1	1		0246	18431
22	0514	0746	0542	3+	3	2			1	1	1		0511	18430
22	0530	0737	0540	1	5	2		3	2	1	4		0531E	18430
22	0831	0917	0834	1-	3	1			1	1	1		0829	18430
22	1219	1300	1228	1	5	1		3	1	1	5		*	
22	1428	1600	1443	3	5	4		4	1	1	13		1422	18430
22	1832	1945	1840	2	3	1		1	1	1	8		1829	18430
23	0006	0130	0012	2+	3	2			2	1	4		0009E	18430
23	0230	0314	0246	1-	3				1	1	1		0232	18430
23	0330	0427	0344	1-	3				1		1		0329	18430
23	0452	0600	0507	1-	3				1		1		0443	18430
23	0624	0902	0702	3+	3	3			1	2	2		0628	18430
23	0906	0955	0914	1-	3			3	1	1	2		0906	18430
23	1002	1020	1010	1-	3				1		2		1001	18430
23	1021	1150	1031	2+	5	4		4	1	1	5		*	
23	1156	1326	1210	2+	5	4		1	2	1	7		1145E	18430
23	1547	1620	1552	1-	3				1		2		1546	18430
23	1715	1745	1725	1-	3				1		1		1716	18430
23	1841	2046	1918	1-	3	1			1		11		1840	18430
23	1905	1945	1913	1-	3				1		11		1840	18430
23	2330	0112	2336	2+	5	3			1		12		2333	18430
24	0207	0235	0210	1-	3				2	1	1		0207	18422
24	0308	0335	0310	1-	1				1				0310	18430
24	0413	0500	0419	1	3	1			2	1	4		0410	18430
24	0520E	0720	0535	3+	5	4		3	1	1	6		0516	18430
24	1300	1320	1302	1	1						1		1300	18430
24	1507	1520	1509	1-	1						1		1509	18430
24	1917	2033	1950	1-	1				1		5		*	
24	2251	0100	2317	2	3	2			1		5		NF	

SUDDEN IONOSPHERIC DISTURBANCES

JUNE 1982

DAY	UNIVERSAL TIME START	END	MAX	IMP	WIDE SPREAD INDEX	NUMBER OF STATION REPORTS BY TYPE SWF	SCNA	SEA	SPA	LF-SPA	SES	SFD	KNOWN FLARE	HALE REGION
25	0332	0400	0340	1-	3				1		1		0329	18430
25	0533	0612	0544	1-	5	3		3	1	2	2		0530	18430
25	0957	1025	1004	1-	5	2		3	1	1	3		0957	18430
25	1046	1127	1051	1	5	3		4	2	1	4		*	
25	1302	1331	1317U	1	3			2			1		1255	18431
25	1942	2038	1949	1-	3	1			1		9		1941	18430
25	2131	2320	2143	2+	5	5			1		14		2134E	18430
26	0043	0428	0056	3+	3	2			2	1	8		0042	18430
26	0920	1037	0946	2+	5	3		4	1	1	4		*	
26	0941	1025	0947	1+	3	3		2	1	1	4		*	
26	1721	1753	1726	1-	3				1		4		NF	
26	1910	2115	1915	3+	5	4		1	1		16		1909	18430
27	0337	0445	0350	1-	3				2		1		*	
27	1022	1135	1032	2	5	3		4	2	1	5		*	
27	1210	1220	1217	1-	5	1			1	1	2		NF	
27	1531	1614	1538	1-	3	1			1	1	3		NF	
27	1840	0000	1910	3+	3						5		NF	
28	1250	1420	1320	1	3			1			2		NF	
28	1445	1530	1447	2	3						2		NF	
28	2118	2150	2121	1-	3	1			1				NF	
29	0840	0905	0851	1-	3	1		1		1	1		*	

OBSERVATORIES REPORTING FOR JUNE 1982:

Ayrshire, Scotland (AY)	SES	Mahwah, New Jersey, USA (A5)	SES
Darmstadt, GFR (DA)	SWF	Maui, Hawaii, USA (MI)	SWF
Durham, North Carolina, USA (A54)	SES	Missoula, Montana, USA (A31)	SES, SWF
Edenvale, South Africa (A52)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF, SFA
Farsta, Sweden (FS)	SES	Paterson, New Jersey, USA (A46)	SES
Frenchtown, Montana, USA (A56)	SES	Portage, Michigan, USA (A51)	SES
Glenorchy, Tasmania, Australia (A43)	SES	Roswell, New Mexico, USA (RW)	SES
Hicksville, New York, USA (HV)	SES	San Antonio, Texas, USA (SA)	SES
Hiraiso, Japan (HI)	SWF	Sao Paulo, Brasil (UM)	SES, SPA
Hobart, Tasmania, Australia (TA)	SEA	Simi Valley, California, USA (A57)	SES
Houston, Texas, USA (A50)	SES	Sofia, Bulgaria (SF)	SEA
Huancayo, Peru (HU)	SWF	Somerton, United Kingdom (SO)	SWF
Inubo, Japan (IN)	SPA	St. Cloud, Minnesota, USA (SC)	SES
Juliusruh, GDR (JU)	SWF	Tavares, Florida, USA (A49)	SES
Kasugai, Japan (KA)	SPA	Trenton, New Jersey, USA (NJ)	SES
Kuhlungsborn, GDR (KU)	SPA, SEA	Tucson, Arizona, USA (A9)	SES
Lake Hiawatha, New Jersey, USA (A32)	SES	Upice, Czechoslovakia (UI)	SEA
Latrobe, Pennsylvania, USA (A19)	SES	Valley Cottage, New York, USA (A1)	SES
Lintong, China (LT)	SPA	Vsetin, Czechoslovakia (VS)	SEA
Louisville, Kentucky, USA (A26)	SES	Walla Walla, Washington, USA (A55)	SES

* No Flare Patrol
NF No Flare Reported
Observations are not necessarily continuous for each reporting station.

SIDs BY HALE REGION

June 1982

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
REGION																															
18395	1																														
18396		1																													
18401		1	1																												
18403		1																													
18404			1																												
18405		1	10	4	10	8	7	5	3	8	4	1	4	5	2																
18410										2			1	1	1																
18411								1																							
18413								1	1																						
18414									1	1																					
18415										1		1	1																		
18416														2																	
18421													2			2		1													
18422												5	1	6	4	6	5	1	10	5				1							
18426															4	1		1													
18430																			2	5	12	6	13	5	5	2					
18431																		3	1		2	2			1						
NO FLARE	1	2	1	13	5	2	1		1		3	4	1		1	2	2							1		1	3	3			
NO FLARE PATROL	1			2	5	3	1	2	1		2	6	2	2	1	1		4		1	1	1	1	1	1	2	2		1		
EVENT TOTALS	3	6	13	19	20	13	9	9	7	12	9	17	12	16	13	12	7	10	13	11	15	9	14	8	7	5	5	3	1		

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
01	0000	0729	CULG	0138		1							IIIB
			CULG				0304.5	0305	2				IIIB
			CULG	0514.5	0515	1							DCIM
			CULG	0600	0601	1							DCIM
			CULG				0623.5	0624					IIIBW
	0652	0728	WEIS										
			CULG				0700	0710	2				II H
	0754	1830	WEIS										
	1221	2300	HARV				1828	1830	2	1829		1	IIIG
			HARV				1842	2254	1				INW
	2030	2400	CULG	2100.5	2348.5	1	2115.5	2256	1				IN
			HARV				2115	2116	2				IIIG
			HARV				2256		2				IIIG,U
02	0000	0729	CULG	0046.5	0047	1							DCIM
			CULG				0354	0354.5					IIIB,W
			CULG	0523	0701								IN,W
	0410	1453	WEIS				0935.6	0935.9	2				IIIB
			WEIS				0941.2	0941.9	2				IIIG
			WEIS				0945.6	0947.7	3				IIIGG,RSU
			WEIS				1025.6	1026.2	2				IIIG
	1221	2240	HARV				1225	2149	2	1837		1	IIIN
			WEIS				1257.7	1259.4	2				IIIGG
			HARV	1258	1259	1	1256	1259	2				IIIGG
			WEIS				1304.7	1306.6	3				IIIGG,U
			HARV	1305	1306	2	1305	1307	3	1305	1306	2	IIGG,V
			HARV	1509	1511	2	1509	1510	2				IIIG
			HARV				1518	1533	3				II
	1501	1826	WEIS				1519	1533	2				II
			HARV	1529		2	1530	1533	2				IIIGG
			HARV				1534	1548	3	1537	1548	2	II
			WEIS				1534.5	1553.0	3				II
			HARV	1544	1547	2	1544	1546	2				IIIGG
			WEIS				1544.2	1545.9	2				IIIG
			HARV				1547	1601	3	1551	1601	2	II
			WEIS				1547.2	1602.5	2				II
			HARV				1625	1627	2				IIIGG
			HARV	1643	1644	2							IIIG
			HARV				1824	2007	1				IN
			HARV				1859	1900	2	1859		1	IIIG
			HARV	1906	1912	2	1906	1912	2	1906	1910	2	IIIGG
			HARV				1917	1923	3	1919	1923	2	II
			HARV	1951		1							IIIB
	2030	2400	CULG	2101	2357.5								IN,W
			CULG				2129	2340.5					IIIN,W
			HARV				2129	2133	2				IIIGG
			CULG	2130.5	2131	1	2130.5	2131	1				IIIG
			CULG				2213.5		1				IIIB
			CULG				2215	2216.5	2				IIIG
			HARV				2215	2216	2	2215	2216	1	IIIGG
			CULG				2327	2339	1				IIIS
03	0000	0730	CULG				0233.5	0302	3				II
			CULG				0257	0325	1				IV
			CULG				0333	0335.5					IN,W
			CULG				0337		1				IIIB
			CULG				0354	0356	1				IIIG,V
			CULG	0401	0634								IN
			CULG				0401	0402					IIIG,W
			CULG				0402	0450	3				II
	0409	1830	WEIS				0410.0	0448.5	3				II HARM
			CULG				0426	0452	1				IV STRUC
			CULG				0502	0526					IN,W
			CULG				0535.5	0540	1				IIIS
			WEIS				0536.2	0539.7	2				IIIGG
			CULG				0539		3				IIIB
			CULG				0605	0605.5	2				IIIB,V
			WEIS				0605.3	0605.6	2				IIIG
			WEIS				0822.2	0822.7	2				IIIG
			WEIS				0833.2	0834.3	2				IIIGG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
03			WEIS				0836.8	0848.3	2				II HARM
			WEIS				0837.2	0837.9	3				IIIG
			LEAR				0837.4	0837.7	1				III
			LEAR				0847.0	0848.2	1				III
			WEIS				0856.5	0856.6	1				IIIG
			WEIS				1142.4	1146.8	3				IIIGG/V
			SGMR				1142.6	1228.0	2				IV
			SGMR				1142.6	1144.3	3				V
			WEIS	1142.9	1148.5	3							IV
			WEIS				1144.0	1210.5	3				II HARM
			WEIS				1147.5	1203.5	3				IV M
			SGMR				1147.8	1148.4	3				III
			SGMR				1202.1	1213.0	2				II
			WEIS				1203.5	1207.5	2				IV
	1220	2300	HARV	1250	1316	3							IV
			HARV	1316	1452	2							IV
			WEIS				1403.7	1404.3	3				IIIG
			SGMR				1403.7	1404.1	1				III
			HARV				1404		2				IIIG
			HARV	1506	1518	3							IV
			HARV	1545		1							IIIG
			HARV	1809	1810	1							IIIG
			HARV	1821		2							IIIG
			HARV				1849		1				IIIB
			HARV				1859	1903	2				IIIG
			HARV				1959	2000	2	1959	2000	1	IIIG
			HARV				2007	2009	2				IIIG
			HARV	2048		2							IIIG
	2030	2400	CULG	2104	2351								IN,W
			CULG				2133	2208	2				IIIN
			HARV				2133	2136	1	2133	2136	1	IIIG
			PALE				2133.0	2136.5	2				G
			CULG				2204	2205	3				IIIG
			HARV				2204	2205	3	2204	2205	2	IIIGG
			SGMR				2204.4	2205.4	1				G
			CULG				2204.5	2329.5					IIIN,W
			CULG	2208	2209	1							DCIM,N
			HARV				2208	2209	2				IIIG
			HARV	2250	2251	1							IIIG
04	0000	0730	CULG							0025	0045		SWF,W
			CULG	0034	0150.5	1							IN
			CULG				0035	0139					IIIN,W
			CULG				0101	0110	2				IIIS
			CULG				0121.5	0137.5	1				IIIN
			CULG	031	0632.5	1							IS
			CULG				0459.5		1				IIIB
			CULG							0511	0522	1	SWF
			CULG				0541	0547.5	2				IIIN
			CULG	0546	0548	2							UNCLF
	0412	0634	WEIS				0548	1647	2				IIIN
			CULG				0630.5						IIIB,W
			CULG				0632		1				IIIB
			CULG	0633	0635	3	0633.5	0635	1				II
			CULG				0657	0657.5	1				IIIG
			CULG				0658	0711					IIIN,W
			CULG				0710.5	0711	3				IIIB,V
	0810	1831	WEIS				0912.4	0914.7	3				IIIG
			WEIS				0922.0	0922.4	2				IIIG
			WEIS				0931.9	0933.3	2				IIIG
			WEIS				1208.4	1210.3	3				IIIGG
			WEIS				1239.0	1243.0	2				IIIG
	1221	2310	HARV				1240	1533	1				IN
	1221	2340	HARV				1319		1				IIIGW
			WEIS				1332.6	1334.3	2				
			HARV	1333	1342	2	1333	1342	2				IIIGG
			WEIS				1335.2	1358.5	2				IV
			HARV	1337	1359	2							IV
			WEIS				1343.8	1347.4	3				IIIG
			HARV				1344	1348	2	1344	1346	1	IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
04			HARV				1350	1355	2	1350	1351	1	IIIG
			WEIS				1350.2	1351.9	2				IIIG
			WEIS				1354.5	1355.1	2				IIIG
			WEIS				1412.9	1422.9	2				IIIG
			HARV	1420	1428	2	1420	1428	2	1420	1428	1	IIIGG
			WEIS				1424.6	1428.6	2				IIIG
			HARV	1502		1	1502		2				IIIG
			HARV	1509	1514	3	1509	1514	2				IIIGG
			WEIS				1509.2	1510.0	2				IIIG
			HARV				1521		2				IIIG
			WEIS				1525.6	1528.6	2				IIIG
			HARV	1527	1528	1	1525	1529	2	1525	1526	1	IIIGG
			HARV				1528	1530	2				UNCL
			HARV	1541		1	1539	1542	2	1539	1542	1	IIIGG
			HARV				1726		1				IIIG
			HARV				1735	1738	1	1735	1738	1	IIIGW
			WEIS				1739.6	1744.3	2				IIIGG
			HARV	1742	1743	2	1739	1745	3	1739	1745	2	IIIGG
			HARV				1850	1851	2	1850	1851	2	IIIB
			HARV	1912	1916	2	1913	1916	2	1913	1916	2	IIIGG
			HARV	1917	1920	2	1917	1920	3	1917	1919	2	IIIGG,V
			HARV	1921	1922	3	1921	1923	3				UNCL
			HARV	1924	1928	2	1924	1928	3	1924	1928	2	IIIGG
			HARV				2003		2	2003		2	IIIG
			HARV							2021		2	IIIG
			HARV				2044	2045	2	2044		1	IIIG
	2030	2400	CULG				2119	2346.5					IIIN,W
			CULG	2144.5	2147	2							DCIM
			CULG	2144.5	2147	2	2144.5	2147.5	3				IIIGG,V
			HARV	2145	2146	1	2144	2147	3	2144	2147	2	IIIGG,V
			CULG				2234.5	2235.5	1				IIIG
			CULG	2304.5	2305	3	2304.5	2311	3				IIIG,V
			CULG	2309.5	2310	3							DCIM
			HARV	2310		1	2309	2310	3	2309	2310	2	IIIG
			CULG				2312.5	2313	2				IIIB
05			CULG							0127	0144	1	SWF
			CULG				0137.5	0621	1				IIIN
			CULG				0146.5	0631.5	2	0147.5	0402.5	1	IIIN
			CULG	0224.5		2							DCIM
			CULG	0224.5	0628.5	1	0117	0629	2	0117	0419	2	IIIG,N
			CULG							0315	0335	1	SWF
	0406	1259	WEIS				0411	1746	2				IIIN
	1311	1832	WEIS				0422.5	0422.9	3				IIIG
			CULG				0422.5	0423	3	0422.5	0423	3	IIIG
			CULG	0425	0705	1							IN
			WEIS	0509.2	0509.6	2							DCIM
			WEIS				0611.4	0611.7	3				IIIG
			LEAR				0611.5	0611.8	1				III
			CULG							0617	0632		SWFW
			CULG				0626	0627	3				IIIG,V
			WEIS				0626.0	0631.6	3				IIIG
			WEIS				0635.9	0640.0	3				IIIG
			CULG	0636	067	3							DCIM
			CULG	0636.5	0639	1	0636	0640	3				IIIGG,V
	0704	0730	CULG				0712.5	0730	1				IIIN
			WEIS				0728.2	0730.9	2				IIIG
			WEIS				0733.3	0746.2	3				IIIG
			WEIS				0744.8	0746.2	3				IIIG
			WEIS				0839.4	0841.4	3				IIIG
			WEIS				1113.6	1114.1	2				IIIG
			HARV				1342	1345	2	1345		1	IIIG
			HARV	1404		1	1404		1				IIIG
			HARV				1407	1930	2				IIIN
			HARV	1448	1450	1	1448	1450	2	1448		2	IIIG
			WEIS				1448.2	1448.9	3				IIIG
			HARV				1500	1503	2				IIIGG
			HARV	1525	1619	1							IIIN
			HARV	1531	1532	3	1531	1532	3	1532		2	IIIG,V
			WEIS				1531.7	1532.2	3				IIIG

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	TIMES OF OBSERVATION		STATION	EVENTS										SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND				
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT		
05			WEIS				1601.6	1601.7	2					RS
			HARV				1630	1631	2	1630	1631	2		IIIG
			HARV				1714	1715	1	1714	1715	1		IIIGW
			HARV	1730	1737	2	1730	1737	3	1730	1737	2		IIIGG,V
			SGMR				1730.2	1743.8	2				II	
			PALE				1730.3	1731.5	2					G
			WEIS				1730.3	1731.3	3					IIIG
			WEIS				1733.6	1736.6	3					IIIGG
			PALE				1734.3	1734.6	2					V
			HARV	1738	1746	2	1738	1745	3	1738	1745	2		IIIGG,V
			PALE				1740.5	1741.1	3					V
			PALE				1743.2	1743.4	1					III
			SGMR				1826.8	1828.5	1					III
			HARV				1827	1828	2	1827	1828	2		IIIG
			PALE				1912.7	1915.4	1					G
			HARV				1913	1915	2	1913	1915	2		IIIG
			PALE				1925.5	1927.3	2					G
			HARV	1926	1927		1925	1930	2	1925	1930	2		IIIGG
			SGMR				1927.0	1927.2	1					III
			HARV	1939	1948	3	1939	1948	3	1939	1948	3		IIIGG
			PALE				1939.5	2004.9	2					GG
			PALE				1942.8	1945.8	3					V
			SGMR				1943.1	2019.2	2					GG
			HARV	1950	1951	2	1950	1951	3	1950	1951	2		IIIGG,V
			HARV				1959		3	1959		2		IIIG,V
			HARV	2001	205	2	2001	2005	3	2001	2005	2		IIIGG,V
			HARV	2013	2018	3	2013	2020	3	2013	2020	2		IIIGG,V
			PALE				2013.2	2018.5	3					V
	0000	0650	CULG				2022	0642.5						IIIN,W
			HARV	2102	2107	2	2104	2106	2	2104	2106	1		IIIG
	2030	2400	CULG	2103.5	2115	3								DCIM
			CULG				2103.5	2321	1					IIIN
			PALE				2103.9	2106.1	2					G
			CULG	2110	2114.5	2	2110	2115	3					IIIGG,N
			HARV	2110	2111	1	2110	2112	3	2110	2112	2		IIIGG,V
			PALE				2110.0	2112.8	3					V
			SGMR				2110.2	2014.9	3					V
			SGMR				2110.2	2114.9	3					V
			HARV				2113	2116	3	2113	2116	2		IIIGG
			PALE				2113.2	2116.2	2					V
			CULG				2116	2356.5	2	2253.5	2356.5	1		IIIN
			CULG				2116.5	2358.5						IIIN,W
			HARV				2229	2230	2	2230		1		IIIG
			PALE				2229.1	2237.1	2					G
			HARV				2237	2238	3	2237	2238	2		IIIG
			CULG	2238	2238.5	1	2238	2239.5	3	2238	2238.5	1		IIIG,V
			PALE				2238.1	2239.3	3					V
			SGMR				2238.1	2238.5	1					V
			HARV	2313	2324	3								IIIGG
			CULG	2316	2319	2								DCIM
			CULG	2319	2335									IS,W
			HARV	2329	2330	1								I
			HARV				640	1658	2	1650	1655	2		UNCL
06	0000	0442	CULG				0001.5	0348	1					IIIN
			CULG				0016	0420.5						IIIN,W
			CULG	0052	0255	1	0003	0347	2	0003	0345.5	1		IIIN
			CULG	0107	0111	1								IS
			HARV				0139		1					IIIB
			LEAR				0202.2	0202.8	2					III
			LEAR				0218.9	0220.2	1					III
			LEAR				0253.7	0254.9	1					III
			CULG				0254.5		3					IIIB
			PALE				0302.1	0302.8	2					III
			PALE				0320.3	0345.4	1					GG
			LEAR				0320.5	0348.1	1					III
			LEAR				0345.3	0348.1	1					III
			CULG	0346	0441.5	1								IN
			LEAR				0618.9	0619.1	1					III
			SGMR				1203.5	1203.7	1					III

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
06	1221	2305	HARV	1501	1505	2	1501	1505	2	1501	1505	2	IIIGG
			SGMR				1501.2	1505.6	1				G
			HARV	1508	1509	1	1508	1509	2				IIIG
			SGMR				1514.8	1515.2	1				V
			SGMR				1532.5	0045.0	5				I
			SGMR				1532.5	1533.0	1				V
			HARV				1544	1555	3				IIIG
			SGMR				1555.2	1555.7	1				III
			HARV				1608		1				IIIBW
		1618	HARV	1615	1619	1	1612	1619	3				IIIGG,V
			SGMR				1617.0	1618.2	2				V
			HARV	1632	1640	2							IIIGG
			HARV	1634	1635	3	1634	1716	3	1643	1716	3	II
			HARV	1635	1754	2	1642	1727	3				IV
			SGMR				1640.0	1640.3	2				III
			SGMR				1640.3	1652.2	2				II
			PALE				1646.0	1808.5	1				CONT
			SGMR				1652.2	1820.0	2				IV
			HARV				1655	1855	3	1655	1812	2	IC
			HARV				1702	1821	2	1714	1813	1	IIIS
			HARV				1747	1748	2	1747	1748	2	IIIGG
			HARV	1755	1916	3	1756	1855	2				IV
			HARV				1905	1906	2	1905		1	IIIG
			PALE				1915.9	1916.2	2				III
			HARV				1916		2	1916		2	IIIG
			SGMR				1916.0	1916.1	2				III
			HARV	1917	2109	2							IV
			HARV				1923	1924	2				IIIG
			HARV				2001	2003	1	2001	2003	1	IIIG
			PALE				2002.2	2002.4	1				III
			SGMR				2002.2	2002.4	1				III
			HARV	2126	2158	2							IV
			HARV				2130	2132	3	2130	2132	2	IIIG,V
			PALE				2130.0	2133.0	3				V
			SGMR				2130.1	2130.2	1				III
	2031	2400	CULG	2132		1	2132	2133	3				IIIG,V,U
			SGMR				2132.0	2132.5	2				V
			CULG				2134.5	2345	1				IIIN
			CULG				2139	2342.5	2				IIIN
			HARV				2143	2144	2	2143	2144	1	IIIB
			SGMR				2143.5	2143.5	1				III
			CULG				2143.5	2202	3				IIIN
			PALE				2143.5	2209.6	2				GG
			CULG				2153.5	2354.5					IIIN,W
			SGMR				2157.8	2209.5	1				G
			HARV				2158	2159	2	2158	2159	2	IIIG
			HARV				2202	2203	1	2202		2	IIIG
			HARV				2206	2209	2				IIIG
			HARV				2212	2214	2				IIIG
			PALE				2339.0	2342.3	2				G
07	0000	0730	CULG				0021	0646.5					IIIN,W
			LEAR				0025.9	0026.1	1				III
			PALE				0025.9	0026.1	2				III
			LEAR				0025.9	0026.1	1				III
			CULG				0026		2				IIIB
			CULG				0151	0526	1				IIIN
			LEAR				0210.9	0211.2	1				III
			PALE				0210.9	0211.2	2				III
			CULG				0211		2	0211		2	IIIG
			PALE				0256.1	0356.3	1				III
			LEAR				0315.8	0316.0	1				III
			CULG	0356									
			LEAR				0356.1	0356.4	1				III
			CULG	0523	0524	1	0523	0524	2				IIIG
			LEAR				0523.0	0528.5	1				III
	0558	1835	WEIS				0712.5	0712.7	1				IIIB
			WEIS				0825.9	0841.3	3				IIIGG/V
			LEAR				0826.1	0840.1	3				V
			SGMR				1211.5	1211.8	1				III

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
07	1221	2300	HARV				1404		1				IIIBW
			WEIS				1404.3	1404.8	1				U
			HARV				1416	1452	1				INW
			SGMR				1519.5	1704.4	1				CONT
			HARV	1536	1537	1							I
			HARV	1726	1729	2							IIIGG
			HARV	1733		2							IIIG
			HARV	1843		2							IIIG
			HARV	1920	1921	2							IIIG
			HARV	1929		2	1929		2				IIIG
			SGMR				2115.0	2115.6	1				III
			PALE				2115.9	2116.7	2				III
	2031	2400	CULG	2116.5		1	2116.5	2117.5	1				IIIG
			HARV	2218		1							IIIG
			HARV	2222	2223	2							IIIG
			CULG	2222.5	2223	1							IS
			CULG				2229						IIIB,W
			CULG	2324	2325.5	1							DCIM
			CULG				2324.5	2325.5					IIIG,W
			CULG				2324.5	2325	2				IIIB
08			CULG				0019.5	0020.5					IIIG,W
	0000	0730	CULG				0019.5		2				IIIB
			CULG	0259		2							DCIM
			CULG				0403.5	0407					IIIN,W
			CULG	0514	0515	3							UNCLF
			CULG	0550	0550.5	3							IIIG
			CULG				0553	0553.5					IIIG,W
	0607	0720	WEIS										
	0731	1834	WEIS				0943.3	0944.3	2				IIIG
			WEIS				1052.1	1052.4	1				IIIG
			SGMR				1214.4	1215.0	1				III
			WEIS				1321.4	1321.7	1				IIIB
			SGMR				1321.5	1325.3	1				III
			WEIS				1324.4	1325.6	2				IIIG
			SGMR				1518.2	1631.0	1				CONT
			PALE				1801.0	1803.8	3				V
			SGMR				1801.2	1803.5	2				V
			WEIS				1801.2	1803.7	3				IIIG
	1220	2305	HARV	1802		1	1801	1804	3	1801	1804	2	IIIGG
			SGMR				1804.8	1810.2	1				G
			PALE				1804.8	1810.3	1				G
			HARV				1805	1810	2	1805	1810	2	IIIG
	2031	2400	CULG	2105	2342	1							IN
			CULG				2108.5	2355					IIIN,W
			CULG				2123	2248	1				IS
			CULG				2126	2139	1				IIIS
			SGMR				2130.2	2130.7	1				V
			CULG				2214	2244	1				IIIN
			CULG				2248	2341.5					IN,W
09	0000	0931	CULG				0012	0652.6					IIIN,W
			CULG	0037.5		1	0037.5	0038	2	0038	0038.5	1	IIIB,V
			CULG	0125.5	0440		0129	0524					IN,W
			CULG				0129.5	0532.5	1				IIIN
			HARV	0200	2203	1							IIIG
			CULG	0244.5		2							DCIM
			CULG				0358	0358.5	2	0358	0358.5	1	IIIG
			CULG	0440	0703	1	0541	0704.5	1				IS
	0530	1518	WEIS				0840.9	0841.2	2				IIIB
			WEIS				0936.5	0937.6	1				IIIG
			WEIS				0953.4	1002.1	2				IIIGG
			WEIS				0957.9	1000.3	2				DCIM
			WEIS				1015.8	1016.0	2				IIIG
			WEIS				1026.7	1027.4	1				RS
			WEIS				1040.2	1041.2	1				IIIG
			WEIS				1204.8	1205.1	1				IIIB
			WEIS				1214.4	1215.8	2				IIIG
			SGMR				1214.8	1231.8	1				G
			WEIS				1220.1	1220.4	2				IIIG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
09	1221	2250	HARV				1230	1923	1				INW
			HARV				1231	1232	2				IIIG
			HARV	1233	1236	3	1233	1237	2				II
			WEIS				1241.7	1242.0	2				IIIB
			WEIS				1249.0	1250.6	1				IIIG
			SGMR				1249.0	1252.1	1				III
			WEIS				1251.3	1252.5	1				II HARM
			WEIS				1306.0	1307.2	1				IIIG
			WEIS				1314.7	1316.0	1				IIIG
			WEIS				1331.0	1332.2	3				IIIG,U
			HARV	1407	2250	1							IIINW
			WEIS				1450.7	1451.3	1				IIIG
			HARV				1451	2231	2	1622		1	IIIN
	1527	1837	WEIS				1621.8	1622.0	1				IIIG
			HARV	1703		2							IIIG
			WEIS				1703.0	1703.2	2				DCIM
			HARV				1714	1715	2	1714	1715	2	IIIGG
			SGMR				1714.2	1715.2	1				V
			WEIS				1714.3	1715.1	2				IIIG
			HARV				1748	1749	2	1748	1749	1	IIIG
			HARV	1909		3							IIIG
			HARV				1930	1932	3	1930	1932	2	IIIGG
			SGMR				1930.5	1931.4	1				V
			PALE				1930.5	1931.4	2				V
			HARV				2031	2033	2	2031	2033	2	IIIG
			PALE				2031.0	2032.1	2				G
			HARV				2059	2100	2	2100		1	IIIG
			HARV				2113	2116	3	2113	2116	2	IIIG
	2031	2400	CULG	2113		1	2113		2				IIIG
			SGMR				2113.0	2113.3	1				V
			SGMR				2113.0	2121.1	1				GG
			PALE				2113.0	2114.3	2				V
			CULG				2114	2231.5					IIIN,W
			CULG	2115.5	2400								IS,W
			PALE				2116.5	2116.8	2				III
			PALE				2120.8	2121.2	2				III
			HARV				2121	2122	2	2121		2	IIIG
			CULG				2121	2325	2				IIIN
			PALE				2123.0	2123.5	2				III
			CULG	2205	2254.5	1	2120.5	2348.5	1				IIIN
			CULG	2223		3	2223		2				IIIB,V
			HARV	2223		2	2223		3	2223		1	IIIG
			CULG	2242.5	2244								CONT,W
			CULG	2252	2302	2							CONT
			CULG	2325		2							DCIM
10	0000	0711	CULG	0000	0637	1							IN
			CULG				0009	0707		0013.5	0305		IIIN,W
			LEAR				0013.2	0013.8	1				III
			PALE				0056.8	0058.5	2				V
			LEAR				0056.9	0058.6	2				III
			CULG				0057	0057.5	3	0057	0058	3	IIIB,V
			CULG				0057	0008.5	1				IIIG
			CULG	0058	0059.5	2							DCIM
			CULG	0240	0304	1	0247	0305	1				IIIGG,N
			LEAR				0246.2	0249.5	1				III
			PALE				0246.7	0249.4	1				G
			CULG				0254.5	0637	1				IN
			CULG	0301	0421	1	0300	0405	1				CONT
			PALE				0303.7	0305.3	1				G
			LEAR				0303.7	0306.5	1				III
			LEAR				0316.5	0400.0	1				CONT
			CULG	0332.5	0333	2							DCIM
	0404	1836	WEIS				0420	1801	2				IIIN
			LEAR				0420.4	0421.3	1				III
			CULG				0420.5		2	0420.5		2	IIIB
			CULG	0427	0428	2	0427.5	0428	1				IIIG
			WEIS				0427.3	0428.0	2				IIIGG,DCIM
			LEAR				0601.7	0604.5	1				III
f	0722	0731	CULG				0604		1				IIIB,Z

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
10			LEAR				0743.4	0755.1	1				G
			HARV	1033	2123	2							IIIN
			WEIS				1049.2	1049.3	2				IIIG
			WEIS				1116.4	1117.4	2				IIIG/DCIM
			WEIS				1123.9	1124.3	2				IIIG
			SGMR				1151.7	1152.0	1				V
			WEIS				1201.8	1206.4	3				IIIGG/V
			SGMR				1202.5	1205.2	2				V
	1221	2245	HARV				1225	1823	2	1706	1926	2	IIIN
			HARV				1253	1254	3	1253		2	IIIG
			WEIS				1253.2	1253.6	3				IIIG
			HARV				1313	1840	1				IN
			WEIS				1324.7	1327.4	2				IIIG,U
			HARV				1325	1327	2				IIIG
			WEIS				1355.9	1359.2	3				DCIM
			WEIS				1423.8	1425.8	3				IIIG
			SGMR				1423.9	1424.4	1				V
			HARV				1424	1426	3	1424	1426	2	IIIG
			HARV	1425	1808	1							INW
			HARV				1435	1437	2				IIIG
			WEIS				1454.9	1455.9	2				IIIG
			HARV				1455		2				IIIG
			HARV				1502	1503	2				IIIG
			WEIS				1534.3	1536.7	1				DCIM
			HARV				1539		2	1539		2	IIIB
			WEIS				1544.8	1546.6	3				IIIG
			SGMR				1544.9	1550.7	1				G
			HARV				1545	1546	2	1545	1546	2	IIIG,V
			HARV				1550	1551	2	1550	1551	2	IIIG,V
			HARV				1554	1556	2				IIIG
			WEIS				1650.3	1650.9	3				IIIB
			WEIS				1732.7	1734.4	2				IIIG
			PALE				1732.7	1734.0	2				G
			SGMR				1732.8	1733.4	1				G
			HARV				1733	1734	2	1733	1734	2	IIIG
			HARV	1737	1803	2							IV N
			HARV				1744	1900	2				IC
			HARV				1801		2	1801		1	IIIG
			HARV				1818	1819	3	1818	1819	2	IIIG,V
			WEIS				1818.0	1818.7	3				IIIG
			SGMR				1818.0	1818.8	1				III
			PALE				1818.0	1819.2	2				V
			HARV	1829	1839	3	1829	1839	3	1829	1839	2	IIIGGV
			WEIS				1830.0	1832.8	3				IIIGG/DCIM
			PALE				1830.0	0222.0	3				CONT
			SGMR				1830.2	1835.5	2				III
			HARV	1848		2	1844	1853	2	1844	1852	2	IIIGG
			HARV				1900	2245	3				IC
			SGMR				1913.0	2136.5	1				CONT
			HARV				1940	2245	3				IV
	2031	2400	CULG	2100	2351	2							CONT
			CULG				2123	2205	2				IIIN
			CULG				2136	2355.5	1				IIIN
			HARV				2147	2148	2	2147	2148	2	IIIG
			CULG				2147	2148.5	3				IIIG,V
			CULG				2204	2235	1				IIIS
			CULG				2218.5	2400	1				CONT
			SGMR				2241.1	2356.0	1				CONT
			CULG				2242.5	2243	1				POSS II
			CULG				2254.5	2354					IIIN,W
			CULG	2324.5	2325.5	1							DCIM
			LEAR				2351.0	0222.0	1				CONT
11	0000	0731	CULG				0000	0700					ISW
			CULG	0010	0702.5	1	0014	0702.5	1				IN
			CULG	0010	0205	1							CONT
			CULG				0014	0644.5	1				IIIN
			CULG				0029	0652					IIIN,W
			CULG	0105.5	0106	1	0105.5	0106	1	0106		1	IIIG
			LEAR				0105.8	0106.3	1				III

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
11			LEAR				0137.3	0137.5	1				III
			LEAR				0207.6	0208.6	1				III
			CULG	0224	0225	2							IIIG
			CULG	0224.5	0225.5	1							CONT
			LEAR				0319.9	0320.6	1				III
			LEAR				0352.6	0353.0	1				III
			CULG	0355	0703	1							CONT
			LEAR				0403.6	0404.1	1				III
			CULG				0530	0700	1				ISC
			CULG	0532	0532.5	1	0532	0533	1				IIIG,U
			LEAR				0532.5	0532.8	1				III
			CULG	0536	0640	2							IN
	0526	0756	WEIS				0604	1823	1				IIIN
			CULG	0637.5	0640	2							DCIM,N
			LEAR				0644.9	0652.3	1				III
	0804	1838	WEIS				1137.2	1142.3	3				IIIGG
			SGMR				1139.8	1140.8	1				III
	1221	2300	HARV	1234	2340	1							IN
			HARV				1239	2235	2	1654	1827	1	IIIN
			HARV	1252		1	1252		2				IIIG
			HARV	1315	2038	2							IIIN
			HARV				1322	1510	1				IN
			WEIS				1347	1750	2				IS
			HARV	1347	1348	2							IIIG
			HARV				1352	1353	2				IIIG
			EIS				1352.2	1353.0	2				DCIM
			WEIS				1451.3	1504.1	3				IIIGG
			SGMR				1454.3	1455.3	1				III
			SGMR				1458.5	1500.1	2				V
			HARV	1459	1506	2	1451	1503	3	1455	1503	2	IIIGG
			WEIS				1503.3	1506.3	2				DCIM
			HARV				1510	1740	1				I
			HARV	1627	1630	2							IIIGG
			HARV				1630	1632	2				IIIG
			WEIS				1630.7	1631.7	2				IIIG
			WEIS				1716.7	1719.2	3				IIIGG
			HARV	1717	1719	2	1717	1719	3				IIIG
			HARV	1722	1724	2							IIIGG
			HARV				1740	1800	2				IC
			HARV				1800	2140	3	1800	2140	2	IC
			PALE				1822.8	1823.0	1				III
			PALE				1828.7	0202.0	1				CONT
			HARV	1904	1906	2							IIIG
			HARV	1911	1912	2							IIIG
			HARV	2043	2044	2							IIIG
			HARV	2053	2102	2							IIIGG
			SGMR				2056.0	2155.0	1				CONT
			CULG				2100	2400	2				IS,C
	2032	2400	CULG	2100	2400	1							IN,C
			CULG				2119	2357	1				S,RSDP
			CULG				2121.5	2339.5	2				IIIN
			HARV	2123	2125	2	2123	2125	3	2123			IIIGG,V
			CULG	2123.5	2125	3	2123.5	2125	3				IIIG
			PALE				2123.6	2127.1	2				G
			CULG				2135	2235	1				IIIS
			HARV				2140	2245	2				IC
			HARV	2147		2							IIIG
			HARV	2232	2248	2							IIIGG
			CULG				2232.5	2257.5					IIIN,W
			CULG	2238	2244	1	2235	2352	1				IIIN
			CULG	2239.5	2241	1							DCIM
			PALE				2339.0	2339.5	2				III
			LEAR				2339.2	2339.5	1				III
12	0000	0731	CULG	0000	0706.5	1							IS
			CULG				0000	0705	1				IS,C
			CULG				0005	0650	1				RSDP,N
			CULG				0011	0650					IIIN,W
			CULG	0028	0644	2							IN
			CULG	0034		2							DCIM

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				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
12			CULG	0045.5	0645.5	1	0056.5	0636.5	1	0057.5	0246	1	IIIN
			CULG	0056	0056.5	1							IIIGG
			CULG	0119		1	0119		2	0119	0119.5	1	IIIB
			CULG	0217.5	0218	2							DCIM
			PALE				0242.6	0248.4	2				G
			LEAR				0245.4	0248.5	2				III
			CULG	0247.5	0248	2	0247.5	0248.5	2	0248		1	IIIG,U
			CULG	0247.5	0850	1							DCIM
			CULG	0333	0333.5	2	0333	0333.5	2	0333	0333.5	1	IIIG
			LEAR				0333.3	0333.8	2				III
	0405	1353	WEIS				0423	1815	1				IIIN
	1408	1836	WEIS				0431	1825	1				IN
			WEIS	0439.4	0440.6	2							DCIM
			CULG				0450.5	0629	2				IIIN
			WEIS				0450.7	0451.0	2				IIIG
			WEIS				0515.3	0515.6	3				IIIB
			CULG							0523	0540	1	SWF
			WEIS				0628.9	0629.2	3				U
			WEIS				0747.6	0748.2	3				IIIG,U
			WEIS				0750.3	0750.4	3				IIIG
			WEIS				1132.8	1133.7	3				IIIG
			SGMR				1132.9	1133.1	1				III
	1221	2310	HARV				1230	2310	2				IC
			HARV	1245	2228	2							IIIN
			HARV	1253	1254	2							IIIG
			HARV	1326	2235	1							IN
			HARV	1326	1334	2							IIIGG
			WEIS				1333.8	1335.2	3				IIIG
			HARV				1334	1335	2	1334	1335	1	IIIG
			HARV				1423	1425	2				IIIG
			SGMR				1433.8	1434.7	1				III
			HARV				1533	1538	3	1533	1538	2	IIIGG,V
			WEIS				1533.2	1534.0	2				IIIG
			WEIS				1535.8	1538.4	3				IIIGG,U
			HARV				1541	1547	2				IIIGG
			WEIS				1543.5	1545.0	3				IIIG,U
			WEIS				1546.9	1547.4	2				U
			HARV				1551	2014	2	1559	2011	2	IIIN
			HARV				1646	1651	2	1646	1651	1	IIIG
			HARV	1658		2	1654	1658	2	1654	1657	1	IIIG
			HARV	1736	1748	3	1736	1742	3	1736	1742	2	IIIGG,V,U
			WEIS				1736.2	1742.5	3				IIIGG
			PALE				1736.5	0456.0	1				CONT
			WEIS	1737.6	1744.4	2							DCIM
			HARV				1800		2				IIIG
			HARV				1812	1817	1	1812	1817	1	IIIG
			HARV	1955	2003	3	1956	2003	2	2003	2003	1	IIIGG
			HARV				2037	2039	2				IIIG
			HARV	2044	2045	2							IIIG
	2032	2400	CULG	2100	2400	1	2102	2400	1				ISC
			CULG				2115	2400					IIIS,W
			CULG				2150.5	2356	1				IIIN
			HARV	2251	2252	2							IIIG
			CULG	2316.5	2317	2							IIIG
			LEAR				2318.0	0929.0	1				CONT
13			CULG				0000 0						IIIS,W
	0000	0731	CULG	0000	0707	1	0000	0248.5	1				IS,C
			CULG	0007		2	0007		1				IIIG
			CULG				0013	0129.5	1				RSDP,N
			CULG				0015.5	0643.5	1				IIIN
			LEAR				0036.4	0044.8	1				III
			CULG				0044.5		2				IIIB
			CULG				0105	0658					IIIN,W
			LEAR				0112.2	0112.3	1				III
			CULG	0113	0114	1							IIIG
			LEAR				0229.9	0230.1	1				III
			LEAR				0235.0	0800.0	1				CONT
			CULG				0248.5	0538					IN,W
			CULG	0254.5		2	0254.5		1				IIIB

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	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
13			CULG	0351	0357.5	1							IIIN
			CULG				0357		2				IIIB
			LEAR				0357.1	0357.5	2				III
			WEIS				0405	0605	1				IS
	0404	1838	WEIS				0439	1833	2				IIIN
			CULG	0530.5		1							IIIG
			CULG				0538	0705	1				IS,C
			CULG	0604.5		3	0604.5		1				IIIB
			CULG	0638		1	0638		1				IIIB
			CULG	0651		1	0651		2				IIIB
			WEIS				0943.6	0944.5	3				IIIG
			WEIS				1007.4	1008.8	3				IIIG
			WEIS				1018.3	1021.0	2				IIIG
			SGMR				1020.3	1020.6	1				III
			WEIS				1045.4	1045.9	3				IIIG
			WEIS				1126.9	1134.6	3				IIIGG
			SGMR				1127.0	1134.6	2				III
			HARV	1239	1242	3							IIIG
	1222	2255	HARV				1330	2255	1				IN
			HARV	1350	1351	3							IIIG
			HARV	1355	2222	2	1329	2255	2	1558	2125	2	IIIN
			HARV				1432		2				IIIG
			SGMR				1432.1	1432.3	1				III
			WEIS				1432.2	1432.6	3				IIIG
			HARV	1436	2053	1							INW
			HARV				1445	1446	3	1445	1446	2	IIIG
			WEIS				1445.3	1446.7	3				IIIG
			SGMR				1445.3	1446.1	2				V
			WEIS				1613	1720	1				IS
			HARV				1617	1618	2	1617	1618	2	IIIG
			WEIS				1617.4	1617.7	2				IIIG
			SGMR				1617.4	1617.7	1				III
			HARV				1700		2	1700		2	IIIB
			HARV	1810		2	1810		2				IIIG
			HARV	1813		2	1813		2	1813		1	IIIG
			WEIS				1816.8	1821.7	3				IIIGG,U
			HARV	1817		1	1817	1822	3				II
			HARV	1817	1822	1							IV
			PALE				1817.8	1821.7	2				G
			SGMR				1820.6	1821.0	1				V
			HARV				1829	1832	2	1829	1832	2	IIIG
			HARV	1839	1840	2	1839	1840	2				IIIG,U
			HARV				1853	1854	2				IIIG
			HARV				1905	1906	2	1905	1906	2	IIIG
			HARV	1922		3	1918	1925	3	1918	1925	2	IIIG
			HARV				1937	1941	2	1937	1941	2	IIIG
			SGMR				1937.6	1939.3	1				G
			HARV				1947	1951	2	1946	1951	2	IIIGG,U
			HARV				2025		2				IIIG
			CULG				2102.5	2358	1				IIIN
	2032	2400	CULG	2102.5	2357.3	1							IN
			HARV				2103		2	2103		1	IIIG
			CULG	2108	2233.5		2108	2400					IIIN,W
			HARV				2109		2				IIIG
			CULG	2119.5	2340	2	2119.5	2340.5	3				IIIG,N
			SGMR				2119.7	2125.9	2				G
			HARV				2120		3	2120		2	IIIG,V
			HARV	2125		1	2124	2125	2	2124	2125	2	IIIG
			HARV	2131		1	2131	2133	3	2133		2	IIIGG
			SGMR				2132.8	2133.0	1				III
			CULG	2151	2329	2	2144.5	2346.5	2				IIIN
			HARV	2154	2155	2							IIIG
			HARV				2158	2159	2	2158	2159	2	IIIGG
			SGMR				2158.3	2204.0	1				G
			PALE				2158.4	2204.2	2				G
			HARV	2226	2230	1	2226	2235	3				IIIGG
14	0000	0732	CULG				0002	0622.5	1	0003.5	0410.5	1	IIIN
			CULG				0003	0707.5					IIIN,W
			CULG				0015.5	0339.5	2	0015.5	0101.5	2	IIIN

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				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
14			CULG	0021	0547.5	1							IN
			CULG				0029	0324	3				IIIN
			LEAR				0029.0	0030.1	1				III
			CULG				0049	0640					IN,W
			PALE				0100.5	0106.4	2				G
			LEAR				0100.5	0106.8	2				III
			PALE				0104.4	0105.9	3				V
			CULG				0104.5	0425.5	3	0104.5	0425.5	3	IIIG,V,N
			PALE				0141.5	0147.8	3				G
			LEAR				0141.7	0154.0	2				III
			CULG	0143	0554.5	1							IIIN
			PALE				0201.0	0456.0	1				CONT
			LEAR				0208.3	0210.1	2				III
			LEAR				0231.2	0929.0	1				CONT
			LEAR				0332.6	0333.8	2				III
			LEAR				0347.8	0350.4	2				V
			LEAR				0422.8	0426.1	3				III
			CULG	0553	0554.5	1	0553.5	0554.5	1				IIIG
	0528	0628	WEIS				0605	1810	2				IIIN
			CULG				0615	0616	2				IIG,V
			WEIS				0615.2	0616.3	3				IIIG
			LEAR				0615.3	0616.5	1				III
			WEIS				0622	0628	2				I
			CULG	0622	0630.5	2	0645	0710	1				IS,C
			LEAR				0622.5	0625.0	2				V
			WEIS				0622.7	0624.8	3				IIIGG,U
			CULG				0623	0624.5	2				IIIG,V
			CULG							0625	0700		SWF,W
			CULG	0629.5	0653	1							IN
			LEAR				0645.3	0646.5	1				III
			LEAR				0652.5	0655.0	2				V
	0637	1838	WEIS				0654	0742	2				IS
			WEIS				0755.4	0755.6	3				DCIM
			WEIS				0758.4	0759.9	2				IIIG
			WEIS				0804.7	0807.3	3				IIIG
			LEAR				0805.9	0807.1	2				III
			WEIS				0812.7	0814.9	3				IIIG
			LEAR				0812.9	0815.0	2				III
			WEIS				1110.7	1111.9	2				IIIG
			SGMR				1111.1	1111.6	1				III
			WEIS				1116.1	1114.9	1				IIIG
			WEIS				1134.9	1137.9	3				IIIGG
			SGMR				1134.9	1136.5	3				V
			SGMR				1213.9	1225.9	1				G
			WEIS				1308.6	1302.0	3				IIIGG/V,U
			SGMR				1308.7	1332.6	3				GG
			WEIS				1319.2	1326.1	2				IIIGG,U
			SGMR				1345.4	1345.5	1				III
			SGMR				1529.9	1530.1	1				III
	1410	2300	HARV	1536	2300	1							INW
			HARV				1546	1547	2	1546	1547	1	IIIG
			WEIS				1546.2	1547.8	3				IIIG
			SGMR				1546.2	1547.8	1				V
			SGMR				1608.6	1609.2	1				V
			WEIS				1608.6	1609.3	2				IIIG
			HARV				1617	2245	1				IN
			SGMR				1624.7	1626.4	2				V
			WEIS				1624.8	1626.3	3				IIIG
			HARV				1625		2	1625		2	IIIG
			SGMR				1641.5	1642.3	2				V
			WEIS				1642.7	1643.3	3				IIIG
			HARV				1643		2	1643		2	IIIG,V
			HARV				1706	1733	2	1706	1733	2	IIIGG,U,V
			WEIS				1706.7	1707.1	3				IIIG,RS
			SGMR				1707.3	1731.1	2				GG
			WEIS				1715.7	1716.4	2				IIIG
			WEIS				1720.6	1721.6	2				IIIG
			WEIS				1726.6	1727.1	2				IIIG
			WEIS				1728.9	1729.9	2				IIIG
			SGMR				1732.7	1733.5	1				V

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				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
14			HARV				1757	2227	2	1800	2034	2	IIIN
			HARV				1815		2				IIIG,U
			WEIS				1815.1	1815.4	2				U
			HARV				1841	1844	3	1841	1842	2	IIIG,U,V
			SGMR				1841.3	1848.2	2				GG
			HARV				1845	1847	3	1846	1847	2	IIIGG,V
			HARV	2019		1							IIIGW
			PALE				2022.5	2034.3	2				G
			SGMR				2022.9	2029.0	2				GG
			HARV				2023	2025	2	2023	2005	2	IIIGG,V
			HARV				2027	2028	2	2027	2028	2	IIIGG
			SGMR				2042.7	2043.7	1				III
			HARV				2043	2044	2	2044		1	IIIG
			HARV				2100	2103	2	2102	2103	1	IIIG
			SGMR				2102.4	2102.6	1				III
	2032	2400	CULG				2111.5	3258					IIIS,W
			CULG	2112.5	2354.5	1							IN
			CULG				2141.5	2358.4					IIIN
			SGMR				2201.8	2202.3	1				V
			HARV				2202	2203	3	2202	2203	2	IIIGG
			CULG				2202	2203	3				IIIG
			HARV				2216	2217	2				IIIG
			CULG	2216.5		1	2216.5	2217	1				IIIB
			CULG	2301	2344	1							IS
			CULG				2333	2334	2				IIIG
			SGMR				8413.0	8482.0	2				GG
15	0000	0715	CULG				0001 0						IIIS,W
			CULG	0032	0032.5	1							DCIM
			CULG							0032	0050	1	SWF
			CULG	0037	0113.5	1							IS
			CULG				0045.5	0658.5	1	0234	0325.5	1	IIIN
			CULG	0118.5	0701	1							IN
			LEAR				0138.8	0320.0	1				CONT
			CULG							0222	0312	2	SWF
			LEAR				0323.2	0326.9	2				V
			PALE				0323.2	0325.7	2				G
	0406	1142	WEIS				0419	1830	1				IIIN
	1153	1840	WEIS				0431.4	0431.7	3				IIIB
			CULG	0431.5		2	0431.5	0432	2				IIIB
			CULG				0446		2				IIIB
			LEAR				0446.3	0454.1	1				III
			LEAR				0516.5	0542.7	1				GG
			WEIS				0528.1	0531.9	2				IIIG
			CULG				0529.5	0531	2				IIIG
			LEAR				0542.7	0929.0	1				CONT
			WEIS				0558.2	0559.9	2				IIIG
			CULG	0558.5	0605.5	1	0558.5	0606	2				IIIN
			WEIS				0605.4	0605.7	3				IIIG
			WEIS				0715.6	0716.0	2				IIIG
			WEIS				0800.2	0800.5					IIIG,U
			LEAR				0809.7	0820.1	1				G
			WEIS				0809.8	0813.2	2				IIIG
			WEIS				0825.3	0828.5	1				II
			LEAR				0825.4	0828.9	1				II
	1222	2245	HARV				1222	1553	1				IN
			HARV				1345	2229	2	1355	2228	2	IIIN
			HARV				1349	1351	2				IIIGG,U
			WEIS				1350.2	1352.9	3				IIIGG
			SGMR				1351.1	1406.5	1				GG
			WEIS				1355.1	1355.3	2				IIIB
			WEIS				1405.9	1410.9	2				IIIGG
			HARV				1406	1410	2				IIIGG
			HARV	1408	2205	1							INW
			WEIS				1413.7	1422.1	3				IIIGG
			SGMR				1413.7	1418.3	3				V
			HARV	1416		2	1413	1418	3	1413	1417	2	IIIGG,V
			HARV				1421		2	1421		1	IIIG
			WEIS				1426.8	1432.9	2				IIIGG
			HARV	1430		1	1427	1433	3	1427	1431	2	IIIG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
15			HARV	1510	1517	3	1510	1517	3	1510	1517	2	IIIGG,U,V
			SGMR				1510.0	1530.1	1				IV
			WEIS				1510.2	1515.7	2				V
			WEIS				1511.7	1511.9	2				U
			SGMR				1511.8	1513.9	2				V
			HARV	1513	1514	2	1512	1530	3	1522	1530	2	II
			WEIS				1514.4	1529.3	3				II HARM
			WEIS				1515.4	1519.4	2				IIIGG
			SGMR				1519.7	1526.4	1				II
			WEIS				1529.2	1543.3	1				II HARM
			WEIS				1538.2	1539.9	1				IIIG
			HARV				1553	2245	2				I
			HARV				1740	1938	2	1740	1938	2	IIIS
			PALE				1806.8	1807.0	1				III
			HARV				1837	1846	3	1837	1846	2	IIIGG,V
			PALE				1837.2	1845.8	3				G
			SGMR				1837.2	1844.0	2				G
			WEIS				1837.3	1840.2	2				IIIG
			PALE				1906.4	1906.5	1				III
			PALE				1926.9	1931.9	2				G
			PALE				2017.4	2117.2	2				GG
			HARV				2043	2044	2	2043	2044	2	IIIG
	2059	2400	CULG	2102.5	2355.5	1							IS,C
			CULG				2108	2400					IIIS,W
			CULG				2110	2359	1				IN
			CULG				2113	2354	1				IIIN
			HARV				2114	2115	2	2114	2115	2	IIIG
			CULG				2114.5	2329	2				IIIN
			SGMR				2114.5	2116.0	1				III
			PALE				2154.6	2154.8	1				III
			PALE				2228.0	2228.1	2				III
			PALE				2256.0	2316.2	2				GG
16	0000	0732	CULG				0000	0708.5					IIIS,W
			CULG				0001.5	0708	1	0034.5	0348.5	1	IIIN
			CULG	0003	0354	1							IN
			CULG				0004.5	0053					IN,W
			CULG				0019	0643	1				RSDP,N
			PALE				0021.7	0043.3	2				GG
			CULG				0022	0636	2				IIIN
			LEAR				0025.8	0026.0	1				III
			LEAR				0026.1	0929.0	1				CONT
			CULG				0043	0043.5	3	0043.5		1	IIIB,Z
			CULG				0055	0702	1				IS
			LEAR				0136.2	0141.3	1				V
			PALE				0136.2	0203.5	2				GG
			CULG				0136.5	0139.5	2	0136.5	0139.5	1	IIIS
			CULG	0203.5	0204	1							IIIG
			PALE				0205.0	0446.0	2				CONT
			CULG							0212	0225	1	SWF
			CULG	0250	0705	1	0212	0457.5	1				CONT
			CULG	0354	0706	1							IS
	0526	1803	WEIS				0526	1800	2				IS
			CULG				0535	0628	1				IIIS
	1805	1839	WEIS				0535	1830	2				IIIS
			LEAR				0628.3	0644.3	2				G
			CULG				0640.5	0643	2				IIIG
			WEIS				0640.8	0643.3	3				IIIG
			WEIS				0705.3	0711.9	2				IIIGG,U
			WEIS				0849.3	0900	3				IIIGG,U
	1405	2315	HARV				1414	1415	2	1414	1415	1	IIIG
			SGMR				1414.0	1414.3	1				III
			HARV	1425	2315	1							INW
			HARV				1430	2315	2				I
			HARV				1503	2306	2	1518	2232	2	IIIN
			WEIS				1637.4	1645.3	3				IIIGG
			SGMR				1637.8	1643.7	2				V
			HARV	1640	1644	1	1638	1644	3	1638	1642	2	IIIGG
			HARV				1707	1812	2	1707	1812	2	IIIS
			SGMR				1726.0	1751.5	1				GG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
16			PALE				1726.1	1812.6	2				GG
			HARV	1832	1833	1	1832	1833	3				IIIG
			WEIS				1832.4	1832.8	3				U
			PALE				1840.7	0446.0	2				CONT
			SGMR				1922.2	2358.0	1				CONT
			HARV	2035	2038	1	2034	2038	3	2035	2038	3	IIIGG,V
			SGMR				2035.0	2040.1	2				V
			PALE				2035.1	2040.3	3				G
			HARV				2039	2103	3	2046	2100	2	II
			SGMR				2042.5	2102.8	2				II
			PALE				2042.7	2100.7	2				II
	2033	2400	CULG	2102.4	2400	1	2104	2400	1				IS,C,DC
			CULG				2107	2125					IIIS,W
			CULG				2108	2348.5	2				IIIN
			CULG				2108.5	2126	1				IIIN
			CULG				2126	2246	2				IIIS
			CULG				2246	2400	2				IIIS
17	0000	0732	CULG				0000	0704.5	1				IIIS
			CULG	0000	0710	1	0000	0549	1				IS,C,DC
			CULG				0001	0700	1				DP,N
			LEAR				0004.9	0929.0	1				CONT
			CULG				0005	0418	2				IIIN
			CULG				0008	0602	3	0008	0338	1	IIIN
			LEAR				0037.6	0038.2	2				III
			PALE				0037.7	0038.1	3				V
			CULG	0042	0042.5	2	0042	0042.5	2				IS
			CULG				0049	0607.5	1				RSDP,N
			LEAR				0103.2	0104.6	2				III
			LEAR				0111.7	0112.3	2				III
			CULG				0418	0704.5	2				IIIS
			CULG				0549	0710	2				IS,C
			SGMR				1038.5	1058.0	1				G
			SGMR				1050.3	1055.1	3				V
			SGMR				1108.2	1108.5	2				III
			SGMR				1114.0	1114.2	1				III
			SGMR				1118.0	2359.0	1				CONT
	1208	2245	HARV				1208	1500	1				IN
			HARV				1233	2158	2	1540	2146	2	IIIS
			HARV				1320	1840	2				IC
			HARV	1632	1633	2	1632	1633	2	1632	1633	2	IIIG
			SGMR				1632.8	1633.3	2				III
			HARV				1653	1702	2	1653	1702	2	IIIGG
			SGMR				1653.0	1721.0	1				GG
			SGMR				1700.7	1701.2	2				V
			PALE				1700.8	1701.8	1				III
			HARV				1717	1720	3	1717	1720	2	IIIGG
			PALE				1717.0	1720.0	2				G
			HARV				1746	1748	2	1746	1748	2	IIIG
			PALE				1748.1	0322.0	1				CONT
			HARV	1750		2							IIIG
			HARV				1840	2245	2				I
			HARV				1843	1900	3	1843	1900	3	IIIGG
			SGMR				1843.1	1900.9	3				GG
			PALE				1843.2	1901.3	3				GG
			HARV	1933	1937	2							IIIGG
			HARV				1955	1956	3	1955	1956	2	IIIG
			SGMR				1955.2	1956.0	2				V
			PALE				1955.2	1956.0	2				V
			SGMR				1955.2	1956.0	2				III
	2032	2400	CULG	2104.5	2206	1							IN
			CULG				2105.5	2316.5	2				IIIS
			CULG				2108	2400	1				RSDP,N
			SGMR				2131.8	2135.6	3				V
			PALE				2131.8	2135.9	3				V
			HARV				2132	2134	3	2132	2134	2	IIIGG
			CULG	2132	2133.5	1	2132	2135	3				IIIGG,V
			CULG				2316.5	2356	2				IIIN
			CULG				2316.5	2400	1				IIIS
18	0000	0733	CULG				0000	0602.5	1				IS

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
18			CULG				0000	0210					IIIS,W
			CULG				0003.5	0602	1	0009	0306	1	IIIN
			CULG	0006	0636	1							IN
			CULG				0006.5	0559	2				IIIN
			LEAR				0023.5	0023.8	1				III
			LEAR				0036.7	0930.0	1				CONT
			CULG				0210	0602					IIIN,W
	0539	1849	WEIS				0542	1819	2				IIIS
			CULG	0550	0551	1	0550	0551	1				IIIG
			LEAR				0600.9	0601.2	1				III
			CULG				0601	0601.5	3				IIIB
			WEIS				0647	1835	2				IN,DC
			SGMR				1208.3	1208.4	1				III
	1209	2315	HARV				1213	2315	2				IC
			HARV	1343	2201	1							INW
			HARV	1422	1423	2	1423						IIIG,U
			WEIS				1512.3	1518.5	3				IIIGG
			SGMR				1513.3	1518.5	2				V
			HARV	1514		1	1512	1516	3	1513	1518	2	IIIGG
			HARV				1628	2303	2	1628	2022	2	IIIN
			HARV	1802	1804	2							IIIG
			PALE				1834.0	1834.5	1				V
			PALE				1842.0	1942.0	1				GG
			SGMR				1902.9	1904.1	2				III
			HARV				1903	1904	3	1903	1904	2	IIIG,V,U
			PALE				1903.0	1904.1	3				V
			SGMR				1932.9	1934.1	2				III
			PALE				1954.5	2054.5	1				GG
			HARV	2101	2102	1	2101	2102	3	2101	2102	2	IIIG
			SGMR				2101.3	2101.5	2				V
	2033	2400	CULG				2101.5		2				IIIB
			CULG	2105.5	2106.5	3							DCIM
			HARV	2106	2107	3							IIIGG
			CULG				2110	2400					IIIS,W
			CULG	2114.5	2355.5	1							IN
			CULG				2116.5	2355.5	1				IIIN
			CULG				2117.5		3				IIIB
			SGMR				2117.6	2158.4	2				GG
			HARV	2118		1	2118	2119	3	2118	2119	2	IIIG
			PALE				2118.4	2129.0	2				GG
			CULG				2118.5	2227.5	2				IIIN
			HARV				2124		2	2124		2	IIIG
			HARV				2129		2	2129		2	IIIB
			HARV				2136	2142	3	2136	2142	2	IIIGG
			CULG				2136.5	2140.5	3				IIIGG,V
			PALE				2136.8	2142.8	3				G
			PALE				2142.8	0448.0	1				CONT
			HARV				2146	2158	3				II
			CULG				2146.5	2202.5	3				II
			CULG	2305	2345	1							IS
19	0000	0703	CULG				0000	0222					IIIS,W
			CULG	0000	0425	1	0205	0705	1				IS
			CULG				0139.5		1				IIIB
			LEAR				0139.9	0140.2	1				III
			CULG				0153		1				IIIB
			CULG				0240	0505	1				CONT
	0406	1041	WEIS				0408	1819	1				IIIS
			CULG				0548	0651.5					IIIN,W
	1058	1844	WEIS	0824.3	0828.5	1	0824.3	0828.5	1				DCIM
	1208	2245	HARV				1211	2245	1				INW
			WEIS				1253.7	1257.2	2				DCIM
			HARV				1254	1941	2	1619	2057	2	IIIN
			HARV				1344	1348	2				IIIG
			SGMR				1344.1	1349.0	1				III
			WEIS				1348.7	1348.4	2				IIIG
			HARV				1516	1519	1	1516	1519	2	IIIG
			SGMR				1516.0	1618.8	1				V
			WEIS				1516.1	1519.2	2				IIIG
			HARV				1538	1539	2	1538	1539	1	IIIG

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
19			SGMR				1538.5	1538.8	1				III
			SGMR				1618.8	1622.6	1				G
			WEIS				1740.9	1742.6	3				IIIG,U
			HARV				1741	1742	3	1741	1742	2	IIIG
			HARV				1754	1755	2	1754	1755	2	IIIG
			HARV				1905	1924	2	1905	1924	2	IIIGG
			PALE				1910.2	0456.0	1				CONT
			SGMR				1911.3	1921.0	1				G
			PALE				1947.9	1957.2	3				V
			HARV				1948	1957	3	1948	1959	2	IIIGG,V
			SGMR				1950.0	1956.1	2				V
			HARV				1958	2024	3	2002	2024	2	II
			PALE				1958.5	2004.0	3				II
			SGMR				1959.1	2008.3	2				II
			SGMR				2003.9	2009.0	2				IV
			PALE				2004.1	2023.3	2				IV
			SGMR				2009.0	2031.5	1				CONT
			CULG	2103.5	2400	1	2105	2400	1				IS,C,DC
	2033	2400	CULG				2104.5	2400					IIIS,W
			HARV				2106	2107	2	2106	2107	2	IIIG
			CULG				2106	2353	1				IIIN
			CULG				2118.5	2328	2				IIIN
			HARV				2135	2137	2	2135	2137	1	IIIG
			HARV				2209	2210	3	2209	2210	2	IIIGG
			SGMR				2209.3	2210.1	1				V
			CULG				2335	2338	3	2335	2338.5	2	IIIN
20			CULG	0000	0705.5	1	0000	0705	1				IS
	0000	0707	CULG				0000	0705					IIIS,W
			CULG				0002.5	0636.5	2				IIIN
			CULG	0020	0021	1							DCIM
			CULG	0020	0024	1							CONT
			CULG				0023.5	0702	1	0050.5	0251	1	IIIN
			CULG	0113	0114	3	0113.5	0114	3				UNCLF
			CULG	0113.5	0116	1							CONT
			CULG							0114	0117		SWF,W
			CULG	0149.5	0155	1							CONT
			CULG							0152	0206	1	SWF
			LEAR				0155.7	0156.8	2				V
			CULG				0156	0156.5	3	0156	0156.5	3	IIIG
			LEAR				0200.0	0930.0	1				CONT
			LEAR				0249.9	0251.8	1				III
			CULG	0400	0403.5	2							IIIN
	0404	1007	WEIS				0407	0954	2				IIIN
			CULG	0559.5		2							IIIG
			CULG	0633.5	0638	1							DCIM,N
	0717	0733	CULG										
	1133	1309	WEIS										
			SGMR				1150.9	1152.6	1				III
			HARV				1215	1407	1				I
			SGMR				1220.9	1222.6	1				III
			SGMR				1234.3	1234.5	1				III
			SGMR				1437.8	1438.1	1				III
			SGMR				1458.7	1954.1	1				CONT
			HARV				1503	1805	2	1543	1805	1	IC
	1529	1841	WEIS				1529	1841	2				IIIS
			HARV				1534	2243	2	1534	2243	2	IIIN
			PALE				1727.0	1835.0	1				CONT
			HARV				1805	2007	3	1805	2159	2	IC
			PALE				1835.1	2135.8	2				CONT
			HARV				2009	2108	2				IC
	2033	2400	CULG	2103.5	2400	1	2104	2400	1				IS,C
			CULG				2114	2400					IIIS,W
			CULG				2123.5	2355.5	1				IIIN
			CULG				2144.5	2231.5	2				IIIN
			CULG				2159	2242	1				RSDP,N
			PALE				2226.8	2314.3	2				GG
			CULG				2227	2229	3				IIIG
			CULG				2242.5	2243	3				IIIB
			SGMR				2242.7	2242.9	1				III

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				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
21	0000	0732	CULG	0000	0706	1	0000	0545	1				IS,C
			CULG				0001	0653.5	1				IIIN
			CULG				0001.5	0656					IIIS,W
			CULG				0011.5	0012	2				IIIB
			CULG				0055	0056	3				IIIG,V
			LEAR				0055.2	0056.0	1				III
			LEAR				0103.2	0930.0	1				CONT
			CULG							0124	0137		SWF,W
	0406	0526	WEIS				0428	1728	2				IIIN
	0605	1842	WEIS				0447	1658	2				IN
			CULG				0545	0706	2				IS,C
			LEAR				0559.5	0603.3	2				III
			CULG				0600	0603	3				IIIGG
	1209	2245	HARV				1218	1404	1				INW
			SGMR				1326.6	1326.8	1				V
			HARV				1353	1354	3				IIIG
			WEIS				1353.7	1354.5	3				IIIG
			SGMR				1353.8	1354.0	1				III
			HARV				1404	2245	2				IC
			HARV				1415	2112	2	1707	2112	2	IIIN
			HARV	1446	2119	1							INW
			SGMR				1612.5	1617.4	2				V
			WEIS				1612.7	1617.3	3				IIIGG
			HARV	1613	1617	2	1613	1617	3	1613	1617	2	IIIGG,V
			HARV				1740	1741	3	1740	1741	2	IIIG,V
			WEIS				1740.3	1741.2	3				IIIG
			SGMR				1740.3	1741.3	2				V
			PALE				1740.4	1741.0	2				III
			SGMR				1833.0	1833.8	1				V
			HARV				1834	1835	2	1834	1835	2	IIIG
			WEIS				1834.2	1835.3	2				IIIG
			PALE				1834.2	1835.4	2				G
			HARV				1932	1933	3	1932	1933	2	IIIGG,V
			PALE				1932.2	1955.0	3				GG
			SGMR				1932.2	1933.3	3				V
			SGMR				1943.9	1954.0	2				GG
			HARV				1944	1945	3	1944	1945	2	IIIG,V
			HARV				1953	1954	3	1953	1954	2	IIIG,V
	2033	2400	CULG	2103	2400	2	2105	2400	1				IS,C
			CULG				2107	2359	1				IIIN
			CULG				2107.5	2400					IIIS,W
			CULG				2111.5	2334	2				IIIN
			PALE				2111.6	2111.7	1				III
			CULG							2302	2307	1	SWF
22	0000	0733	CULG	0000	0707.5	1	0000	0707	1				IS,C
			CULG				0000	0307.5					IIIS,W
			CULG				0008	0632	1				IIIN
			CULG				0023	0024	2				IIIB,W
			LEAR				0023.2	0023.9	1				III
			LEAR				0124.5	0127.0	1				V
			CULG				0124.5	0126	3	0124.5	0126	1	IIIG,V
			PALE				0124.6	0125.9	2				V
			CULG				0146.5	0149.5	3				IIIGG,U,V
			LEAR				0146.8	0150.1	1				V
			PALE				0146.9	0206.7	2				GG
			CULG				0155	0206.5	2				IIIN
			LEAR				0156.5	0157.4	1				III
			LEAR				0206.2	0206.9	1				III
			CULG				0317	0634					IIIN,W
	0406	1143	WEIS				0446	1736	2				111N
	1244	1841	WEIS				0450	1255	3				IS,DC
			LEAR				0610.9	0611.4	1				III
			CULG	0642.5	0643	2	0642.5	0643	2				IIIG
			WEIS				0642.7	0643.1	3				IIIG
			WEIS				0712.1	0713.3	3				IIIG
			WEIS				1015.7	1034.3	3				IIIGG
			SGMR				1018.0	1032.0	1				GG
			SGMR				1019.0	1032.0	1				GG
			SGMR				1028.9	1032.0	1				III

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
22			SGMR				1102.8	1110.1	1				GG
	1208	2245	HARV				1210	2027	2				IC
			HARV	1215	2051	1							INW
			HARV				1314	1316	2				IIIG
			HARV				1506	1507	2	1506	1507	1	IIIG
			WEIS				1506.2	1507.9	3				IIIGG
			HARV				1615	2031	2	1625	2031	2	IIIN
			HARV				1646	1650	2	1646	1650	2	UNCL
			PALE				1944.3	2039.7	1				GG
			HARV				2027	2150	1				I
			HARV				2037	2040	2	2037	2040	2	UNCL
	2034	2400	CULG	2104	2400	1	2105	2400	1				IS,C
			CULG				2121	2400	1				IIIS
			CULG				2123	2124.5	2				POSS II
			HARV				2150	2245	2				IC
			CULG				2201	2318	2				IIIN
			HARV				2243	2266	2				UNCL
			CULG	2308.5	2309	1	2308.5	2309	1				IIIG
23	0000	0734	CULG				0000	0705					IS,W,C
			CULG	0001	0705	1							IN
			CULG				0001	0644	1				IIIN
			CULG				0001	0656					IIIS,W
			CULG				0001.5	0652.5	1				RSDP,N
			CULG							0006	0013		SWF,W
			CULG				0006	0640	2				IIIN
			CULG	0048.5	0049.5	2							DCIM
			LEAR				0051.6	0051.8	1				III
			CULG				0116	0119					POSS II,W
			LEAR				0127.8	0930.0	1				CONT
			CULG	0246	0544	1							IIIN
			PALE				0247.8	0247.9	2				III
			CULG	0338.5	0341.5	2							IIIN
			CULG				0446.5	0447.5	3				IIIG
	0527	1607	WEIS				0527	1738	2				IIIN
			CULG				0545.5	0547.5					II W
			CULG				0617.5	0618	3				IIIG
			CULG	0629.5	0630	2							IIIG
	1626	1842	WEIS				0651	1532	2				IN,DC
			CULG	0700.5	0702.5	3							IIIN
			WEIS				0700.5	0702.6	3				DCIM
			WEIS				0726.1	0727.0	2				IIIG
			WEIS				0759.8	0759.9	3				IIIB
			WEIS				0806.2	0809.5	3				IIIGG,U
			LEAR				0806.4	0609.8	1				III
			LEAR				0806.4	0809.8	1				III
			WEIS				0959.7	0959.8	2				IIIB
	1208	2245	HARV				1208	2245	2				IC
			HARV	1251		1							IIIG
			HARV	1257		1							IIIG
			HARV	1346	1347	2							IIIG
			HARV	1352		1							IIIG
			HARV	1405	2245	1							INW
			HARV				1406	2158	2	1537	2036	2	IIIN
			HARV				1442	1443	2				IIIG
			HARV				1500	1504	2	1504		1	IIIGG
			WEIS				1500.1	1500.9	3				IIIG,U
			WEIS				1503.6	1505.6	2				IIIG
			HARV				1511	1515	2	1511	1515	1	IIIGG
			WEIS				1515.2	1515.7	3				IIIG
			SGMR				1537.1	1549.0	1				GG
			WEIS				1546.6	1550.0	3				IIIG
			HARV	1547		1							IIIGG
			HARV				1555	1557	2	1555	1557	1	IIIGG
			WEIS				1555.4	1557.6	3				IIIG
			HARV	1732	1734	2							DCIM
			WEIS				1746.0	1815	2				CONT,P
			HARV	1811	1814	3							DCIM
			WEIS				1815.4	1822.2	3				IIIGG
			PALE				1815.7	1822.0	2				G

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
23			HARV	1816	1822	2							DCIM,RS
			SGMR				1817.9	1821.8	1				V
			HARV	1818	1822	3	1815	1824	3	1816	1822	2	IIIGG
			PALE				1829.7	1839.0	1				G
			HARV	1905	1910	1	1908	1911	3	1908	1911	2	IIIGG,V
			PALE				2011.9	2021.9	1				G
			HARV	2012		1	2012		2				IIIG
			HARV	2020		1	2018	2021	2	2020	2021	2	IIIG
			PALE				2047.8	2047.9	2				III
	2034	2400	CULG				2101.5	2359					IIIS,W
			CULG				2104	2400	1				IS,C,DC
			CULG	2104.5	2355.5	1							IN
			CULG				2110.5	2359.5	1				IIIN
			CULG				2134	2143	1				II
			CULG				2142.5	2328	2				IIIN
			CULG				2157.5	2158.5	3				IIIG
			CULG	2236	2238	3							DCIM
			HARV	2236	2238	3							DCIM
			CULG	2329.5	2331.5	1							IIIN
			CULG							2332	2340		SWF,W
24	0000	0734	CULG				0000	0707	1				IS,C
			CULG				0000	0658.5					IIIS,W
			CULG				0002.5	0648.5	1				IIIN
			CULG	0022.5	0116	3							DCIM,N
			CULG				0023	0023.5	2	0023.5		1	IIIG
			LEAR				0023.3	0023.5	1				III
			CULG	0033.5	0704								IN,W
			CULG	0520	0524.5	2							CONT
			CULG	0520	0523	3							DCIM
			CULG				0522.5	0527	3				IIIGG,V
			LEAR				0522.7	0532.0	1				IV
	0407	1842	WEIS				0526	1739	1				IIIN
			CULG				0538		2				IIIG
			LEAR				0600.0	0931.0	1				CONT
			CULG				0618	0630	2				IIIS
			WEIS				0916.7	0917.1	2				IIIG
	1208	2245	HARV				1214	2230	1				IN
			HARV	1215	2245	1							INW
			SGMR				1346.3	1346.4	1				III
			HARV	1446	2235	2	1510	2213	2	1718	1940	2	IIIN
			HARV				1602	1604	2				IIIG
			HARV				1711	1713	1	1711	1713	1	IIIGW
			WEIS				1711.7	1713.8	1				IIIG,U
			HARV				1745		2	1745		1	IIIG
			HARV				1940	1944	2				UNCL
			HARV	1943	1950	1	1946	2004	1				IV
			HARV				2056	2057	2				IIIGU
	2035	2400	CULG	2104	2359	1							IN
			CULG				2110.5	2351.5					IIIS,W
			CULG				2129	2129.5	2				IIIG
			HARV				2129	2130	2	2129	2130	2	IIIGG
			PALE				2129.2	2143.0	1				GG
			HARV				2137	2142	2				IIIGG
			CULG				2137	2141	2				IIIGG
			CULG	2144	2338	1	2141.5	2349.5	1				IIIN
			CULG				2258.5	2302	2				IIIG,V
			CULG	2307.5	2341	2	2213	2341.5	2				IIIN
25	0000	0710	CULG				0001.5	0658.5					IIIN,W
			CULG				0008	0022.5	2				IIIN
			CULG				0024.5	0704.5	1				IIIN
			CULG	0042.5	0704.5								IN,W
	0408	0517	WEIS										
			CULG	0457.5	0459	1							IIIG
			CULG				0530	0535.5	3				IIIS
			LEAR				0530.2	0535.9	1				III
			CULG				0531	0538.5					IS,W
	0604	1843	WEIS				0704	1818	2				IIIN
	0722	0735	CULG										

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	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
25	1208	2245	HARV				1218	2245	1				IN
			HARV				1234		1				IIIG
			HARV				1511	1512	2	1511	1512	1	IIIG
			HARV				1623		1	1623		1	IIIBW
			HARV				1628		1	1628		1	IIIG
			HARV	1639	1640	1	1639	1641	3	1639	1641	2	IIIGG
			SGMR				1639.1	1640.1	1				V
			WEIS				1639.3	1641.2	3				IIIG
			HARV	1646		1							I
			HARV				1653	1700	2				I
			HARV	1656	1658	1	1654	1658	3	1654	1657	2	IIIGG
			HARV				1716		2				IIIG
			HARV	1803	1804	2	1803	1804	2	1803	1804	2	IIIGG
			HARV	1815		2	1815		2				IIIG
			SGMR				1943.8	1945.3	2				V
			PALE				1943.9	1946.7	3				V
			HARV	1944	1946	2	1944	1946	3	1944	1946	2	IIIGG,V
			HARV				2007	2008	2	2007	2008	2	IIIG,V
			SGMR				2007.2	2007.7	1				V
			HARV				2012	2013	2	2012	2013	2	IIIG
			HARV	2052		1							IIIB
	2035	2400	CULG	2104	2400	1							IN
			HARV	2105	2108	1							I
			CULG				2106	2359.5					IIIN,W
			CULG				2122	2359	1				IIIN
			HARV				2133	2136	3				IIIGG
			CULG				2133	2158					IS,W
			CULG				2133.5	2139	3				IIIGG,V
			PALE				2133.7	2136.5	2				V
			HARV				2134	2136	3	2134	2136	2	UNCL
			HARV	2135	2139	2	2135	2139	2				IV
			CULG	2136	2139	1							CONT
			HARV				2140	2142	2	2140	2142	1	IIIG
			CULG				2140	2142.5	2				IIIG,N
			CULG	2141	2147	1							CONT
			HARV				2200		2				IIIG
			CULG				2207.5	2228.5	2				IIIN
			CULG				2254.5	2400					IN,W
26	0000	0734	CULG				0002.5	0702.5					IIIN,W
			CULG	0009	0702		0006	0702					IN,W
			CULG				0010.5	0709.5	1				IIIN
			CULG				0018	0709	2				IIIN
			CULG	0028	0029	1	0028	0029.5	1				IIIG
			CULG							0047	0104	1	SWF
			LEAR				0049.4	0050.5	1				III
			CULG	0053.5	0107	2							IS,C
			LEAR				0130.0	0230.0	1				CONT
			CULG				0136.5	0142	2				IIIGG
			CULG				0138	0139	3	0138	0139.5	3	IIIG,V
			CULG				0205	0206.5	1				DC
			LEAR				0323.2	0324.0	1				III
	0408	1140	WEIS				0536.8	0536.9	1				IIIB
			WEIS				0618.7	0619.8	1				IIIG
			WEIS				0653.1	0656.4	3				IIIGG
			CULG				0654	0655.5	3				IIIGG
			LEAR				0654.1	0656.3	1				III
			LEAR				0708.6	0709.8	1				III
			WEIS				0708.7	0709.7	2				IIIG
			WEIS				0741.5	0742.1	2				IIIG
			LEAR				0741.6	0747.2	1				III
			WEIS				0746.9	0747.3	3				IIIG
			WEIS				0839.6	0839.8	1				IIIB
			WEIS				0919.2	0924.0	3				IIIGG,U
			WEIS				0925.7	0925.9	2				IIIB
			WEIS				0938.3	0943.4	3				IIIGG
			SGMR				0940.4	0942.8	1				V
	1149	1842	WEIS				1232.7	1232.9	1				IIIB
			WEIS				1323.8	1323.9	2				IIIB
	1209	2315	HARV	1450		1							INW

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				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
26			HARV				1508	1513	2				IIIG
			HARV				1547		1	1547		1	IIIG
			WEIS				1547.0	1547.3	2				IIIB
			HARV				1601		1	1601		1	IIIG
			HARV				1624	1625	2	1624	1625	1	IIIG,U
			WEIS				1624.3	1624.7	1				IIIG
			PALE				1910.8	1918.8	2				V
			SGMR				1910.9	1915.1	2				III
			HARV	1911	1915	2	1911	1919	3	1911	1919	2	IIIGG,V
			HARV				1924	1928	1	1924	1928	1	IIIGW
			HARV				1949		1	1949		1	IIIG
	2035	2400	CULG	2104	2313								IN,W
			CULG				2133	2344					IIIN,W
			HARV				2200	2201	2	2201		1	IIIG
			CULG	2201		2	2201		3				IIIB
			CULG				2258.5		1				IIIB
27	0000	0735	CULG				0026.5		1				IIIG
			CULG				0033	0641					IIIN,W
			CULG				0527.5	0528	2				IIIG
			LEAR				0527.6	0528.3	1				III
	0408	1712	WEIS				0627.5	0629.1	1				IIIG
			CULG				0641.5		2				IIIB
			WEIS				0711.7	0713.7	1				IIIG
			WEIS				0911.4	0912.3	3				IIIGG
			LEAR				0911.5	0912.2	1				III
			WEIS				0952.1	0952.3	1				IIIG
	1208	2245	HARV				1621	1622	2	1621	1622	1	IIIG
			WEIS				1642.6	1643.0	1				IIIG
			HARV				1728	1730	3	1728	1730	2	IIIG
			SGMR				1728.2	1729.9	1				III
			PALE				1728.6	1729.8	1				G
			HARV				1735	1810	1				IN
			HARV				1810	1925	2				IC
			HARV				1814	1818	2	1814	1818	2	IIIG
			PALE				1855.0	2036.5	1				CONT
			HARV				1911	1931	1				IN
	2035	2400	CULG										
			PALE				2036.5	0448.0	2				CONT
28	0000	0735	CULG				0332	0332.5	2				IIIG
			LEAR				0332.2	0332.3	1				III
			CULG				0417	0432.5					IIIS,W
			CULG				0424		2				IIIB
			CULG				0529						IIIB,W
	1208	2310	HARV				1435		1				IIIBW
			HARV				1445	1446	1				IIIGW
			HARV	1547	1548	2							IIIGW
			HARV				1627		2				IIIG
	0510	1842	WEIS				1627.1	1627.3	1				IIIB
	2035	2400	CULG				2305.5	2348					IIIN,W
			CULG				2322.5	2337.5	3				IIIS
			PALE				2322.5	2333.0	2				CONT
			LEAR				2323.7	2330.3	1				III
			CULG				2346.5	2350.5	2				IIIS
			PALE				2348.3	2350.5	1				G
29	0000	0735	CULG	0145	0146	1							IIIG
			LEAR				0332.2	0332.3	1				III
			CULG	0452.5		1							IIIB
			CULG				0507.5	0508	1				IIIG
	0411	0706	WEIS				0508.8	0508.9	1				IIIB
			CULG				0602	0656					IIIN,W
	0716	1843	WEIS				1249.6	1251.1	3				IIIG
			SGMR				1249.8	1251.0	1				V
	1208	2300	HARV				1250		2				IIIB
			HARV				1543		1				IIIG
			WEIS				1543.1	1543.3	1				IIIG
			WEIS				1633.7	1634.1	1				IIIB
	2035	2400	CULG	2137	2138	1							IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

JUNE 1982

	TIMES OF OBSERVATION		STATION	EVENTS									SPECTRAL TYPE
				DECIMETRIC BAND			METRIC BAND			DEKAMETRIC BAND			
	START UT	END UT		START UT	END UT	INT	START UT	END UT	INT	START UT	END UT	INT	
29			CULG				2214.5	2216	2				IIIG
			HARV	2217	2218	1	2217	2219	3	2217	2219	2	IIIGG
			CULG				2217	2219.5	3				IIIG,V
			CULG	2217	2219	2							DCIM
			SGMR				2217.2	2219.3	1				V
			PALE				2217.2	2219.3	2				V
30	0000	0710	CULG				0256.5	0432.6					IIIN,W
	0408	1225	WEIS										
	0725	0735	CULG										
	1244	1309	WEIS										
	1324	1843	WEIS										
	1208	2245	HARV				1758		1	1758		1	IIIGW
	2036	2400	CULG				2137.5	2138					IIIG,W

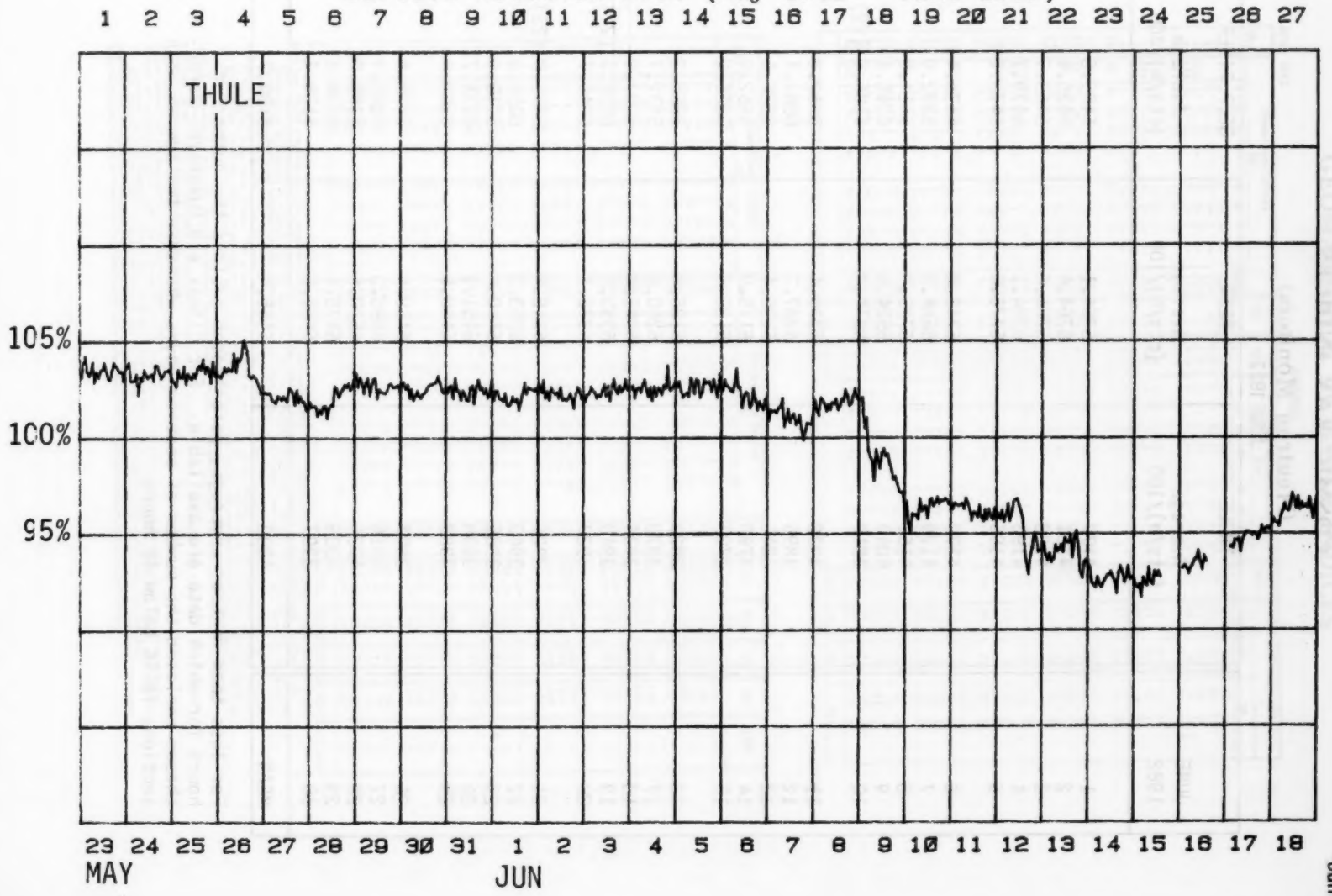
The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

THULE NEUTRON MONITOR

Bartels Rotation 2034 (May 1982 - June 1982)



COSMIC RAY INDICES

(Neutron Monitors)

JUNE 1982

JUNE 1982	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300
1	4177	6764.1	6409.8
2	4181	6764.4	6436.5
3	4188	6786.6	6463.7
4	4193	6784.1	6479.7
5	4195	6778.0	6473.2
6	4179	6748.8	6436.4
7	4129	6684.8	6392.9
8	4163	6723.0	6414.0
9	4040	6524.6	6245.4
10	3940	6374.2	6105.8 (22)
11	3932	6339.4	6062.2
12	3896	6287.3	6063.4
13	3845	6199.4	5920.1
14	3788	6115.9	5852.0
15	3783	6122.6	5826.2
16	3820	6186.4	5858.2
17	3878	6260.8	5932.7
18	3936	6345.4	6007.9
19	3940	6353.5	6050.3 (22)
20	3920	6333.5	6040.7
21	3926	6348.8	6035.0 (23)
22	3940	6363.3	6055.6
23	3985	6440.8	6110.9
24	3998	6461.5	6135.7
25	3982	6449.5	6108.0
26	3997	6458.8	6127.8
27	4016	6495.3	6165.9
28	4024	6510.6	6160.0
29	4009	6475.4	6130.8
30	3997	6481.6	6138.7
MEAN	4000	6465.4	6154.7

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclosed the number of section hours whenever the sum of both sections falls below 40 hours.

GEOMAGNETIC ACTIVITY INDICES

JUNE 1982

JUNE 1982

Day	Three-Hourly Indices Kp									Ap	Cp	Three-Hourly Indices Km								Am	aa (Provisional)			
		1	2	3	4	5	6	7	8	Sum			1	2	3	4	5	6	7	8		N	S	M
1		4	3+	3	2	2	3+	4+	4+	26+	20	1.0	4-	4	3	3-	2-	3-	4	4	36	36	30	32 34
2		5	4+	3+	2	2	1+	3	2+	23+	18	1.0	4	4	4-	3-	2+	2-	3-	3-	33	28	34	43 19
3	Q5A	3-	3-	2+	2+	2	2-	2+	3-	28-	9	0.5	3-	2+	2	2+	2	2	1+	2+	17	21	15	20 15
4	Q3A	3-	2	1-	1	2	1+	1	3-	13+	7	0.3	3	2	1	1-	2-	1+	1+	3-	13	19	8	11 16 C
5	Q1	2-	2-	1+	2	1+	2-	1+	2-	13-	6	0.3	2	2-	2-	2	2-	2-	1+	1+	12	16	11	14 13 C
6	Q0A	4	3	4	3-	3-	2+	2-	2	22+	14	0.8	4-	3	4-	2+	2+	2	2-	2-	24	32	17	33 16
7	Q9A	3	3-	4-	4	3-	2+	2-	2-	22-	14	0.8	3	3-	3+	4	2+	2+	1+	2-	26	27	21	31 17
8	Q7A	1+	1+	1	2	2+	3+	3-	3	17	9	0.5	1+	1	1-	2-	2-	3	3-	3	16	24	10	9 25
9		5	4-	3-	3-	3+	1+	1+	2-	22-	16	0.9	4+	3	2+	3-	3	2-	1+	1+	24	35	24	42 16
10	Q3	4-	6+	6-	5+	6	6-	2+	3	38	51	1.6	3+	5+	5+	4	5-	5-	2	3	66	73	69	90 52
11	Q5U	4-	5-	4+	3	3-	4+	5-	6-	33	32	1.3	4-	4	4	3	3-	3	4-	5-	46	52	29	32 49
12	Q2	6-	3+	3-	2	6	7-	6+	6	39-	59	1.7	5-	3+	3	2+	5-	5+	5-	5-	63	81	39	34 86
13	Q1	5	4+	5	5	6+	5+	6+	6	43+	62	1.7	5-	4	5	4+	5-	4	5-	5+	78	76	64	63 78
14		3-	4	4+	4	3+	5-	4+	2+	30-	24	1.2	3-	4-	5-	4-	3-	3	4-	3-	39	45	35	41 39
15		3+	3	5-	3-	4-	5+	4-	4-	30	26	1.2	3	3	4+	3	3	4	3-	3+	40	45	35	39 40
16	Q8A	3+	2-	2	2	3+	3-	2+	2	19+	10	0.6	3	1+	2-	2	3-	2	2+	2-	18	25	19	17 27
17	Q4	1+	2+	3-	2+	2+	1	1-	0	13-	6	0.3	1+	2+	3	2+	2+	1-	0+	0+	13	11	10	13 8 C
18	Q2A	1-	3-	3-	1	1+	1+	2+	1+	13+	7	0.3	1	3	3-	1+	1+	1	2	1	13	19	9	15 12
19		2-	2-	3+	3	4+	5-	4	5	28-	24	1.2	1+	2-	4-	3	3+	3+	3+	4	31	52	30	27 55
20		4	3-	4-	3	3	4-	3+	3-	26	18	1.0	4-	3	3	3+	3-	3-	3-	2+	29	36	20	30 27
21	Q6A	2	2	3	3-	3	2-	0+	2+	17	9	0.5	2-	2	3+	3	2+	1+	1-	2+	18	21	11	19 12
22		2-	2-	2	2	4+	4-	4+	5	25-	20	1.0	1+	1+	2+	3-	3+	3-	3+	4+	27	40	15	11 44
23		4+	5-	4+	2+	3	2	2	3	26-	20	1.0	4	4+	4	3-	3	2+	2	3-	36	32	19	33 18
24		2	2	3	3-	3-	1+	4	6	24-	21	1.1	2	2+	3-	3	3	1+	3+	5	32	36	34	24 46
25		4+	4-	4+	4	2+	1+	1-	1+	22	17	0.9	4-	4	4	4-	2	1+	1-	1+	29	30	37	54 14
26		1+	2+	2	2-	3	3+	4	5-	22+	16	0.9	1+	2	2-	2+	3-	3-	3	4-	23	31	24	12 43
27		5+	4	4	3	3+	2+	5	5+	32+	32	1.3	5-	4	4	3+	3-	2	4+	5-	52	50	37	39 49
28		4	4+	3+	4+	3	4+	3+	5-	31+	27	1.2	4	4-	3+	4	3-	4-	3-	4-	42	48	37	44 41
29		4+	2+	2+	4	2+	4	3	4	26+	19	1.0	4-	2+	2+	4-	2+	3	3	4-	31	39	27	30 36
30	Q4	4+	7-	5	4+	3-	2+	4-	5	34	39	1.4	4-	5+	5-	4-	3	2+	3	4-	50	40	35	43 32
											22	0.95									32.6	37.3	26.8	32.1

Day	Three-Hourly Indices Kn								An	Three-Hourly Indices Ks								As	Sa	Prov Ri	Ra	Rs	IMF
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8						
1	4-	4	3	3-	2	3	4-	4-	36	4-	4	3-	3-	1+	2	4	4	35	134.2	70	67	83	A -
2	4	4-	4-	3-	3-	2	3-	3-	31	4+	5-	4	2+	2	1+	3-	3	35	135.1	83	85	84	- -
3	3-	2+	2+	3-	2	2+	2-	2+	19	3	2+	2-	2-	2-	2	1	2+	15	141.5	94	94	91	AT -
4	3-	2	1	1+	3-	2-	1+	3-	15	3	2	1-	0+	0+	1+	1	2+	11	158.2*	104	107	109	T -
5	2-	2-	2-	3-	2	2+	2-	2-	15	2	1+	1+	2-	1+	1+	1-	0+	9	156.6*	111	113	107	- -
6	4	3	4-	3-	3-	3-	2+	2+	29	3	3-	4-	2	2+	1-	1-	1	18	149.6*	108	109	100	A -
7	3	3	4-	4	3-	3-	2	2+	29	3-	3-	3+	4	2-	2	1	1	24	158.6*	115	119	109	A -
8	2-	2-	1-	2	2+	3+	3	3	20	1	0+	0+	1	1+	2+	2+	3-	12	167.3	127	130	119	A -
9	5-	3	3-	3-	3+	2	2	2	30	4-	3	2	3-	3-	1+	1-	1-	19	177.4	142	145	130	A -
10	4-	5+	5+	5-	5	5-	2+	3	70	3	6-	5+	4-	4+	5-	2-	3-	62	196.0*	147	146	150	T -
11	4-	4+	4+	3	3	4-	4	4+	50	4	4	4	3-	2	2+	4-	5-	43	224.2	138	150	180	- -
12	5-	4-	3	2+	5+	6-	5	5	73	4+	3-	3	3-	4-	5+	4+	4+	52	238.3*	144	148	195	- -
13	4+	4	5	5	5	4+	5	6-	87	5-	4	5-	4-	4+	4-	5-	5	69	240.2	139	145	197	- -
14	3-	4	4+	4	3	4-	4-	3	44	3-	3+	5-	4-	3-	2+	3+	2	34	240.8	137	148	198	- -
15	3	3+	4+	4-	3+	4+	3	3+	43	3+	3	4+	3-	3	4-	2+	3+	36	235.8	125	143	193	- -
16	3	1+	2	2+	3	2+	2	2	19	3+	1+	2-	2-	3-	2-	3-	1+	17	210.6*	128	130	165	- -
17	1+	2+	3	3-	2+	1+	1	1-	15	1	2	3	2	2	0+	0	0	11	206.0*	136	136	160	A -
18	1+	3	2+	1+	2	2-	3-	2-	16	0+	3+	3-	1	0+	0+	2-	0	11	200.7*	134	141	155	TA -
19	2-	2-	4-	3+	4-	4-	3+	4	37	1-	2-	3+	2+	3	3-	3+	4-	26	207.5	134	141	162	A -
20	4-	3	3+	4-	3	3+	3	2+	33	3+	3-	3-	3	2+	2	3-	2	24	207.1	139	152	162	A -
21	2	2+	3+	3+	3-	2-	1-	2	21	2-	2	3	2	2	1-	0+	2+	14	210.7	143	153	166	A -
22	1+	1+	2+	3-	4+	3	4-	4	32	1+	1+	2+	3-	2	2	3-	4+	22	197.2*	146	142	151	A -
23	4-	5-	4	2+	3	2	2+	3-	34	4	4+	4+	3-	3-	2+	2	3	37	187.3	116	131	140	T -
24	2+	2+	3-	3	3-	2-	4-	5-	33	2	2	3	3-	3	1	3	5	30	168.2	112	114	120	T -
25	3+	4-	4	3+	2+	2-	1-	2-	28	4-	5-	4-	4-	2	1	1-	1+	31	159.1*	92	103	110	T -
26	1+	2+	2-	2+	3	3	3	4-	24	1	2	2-	2	3-	3-	3	4-	22	142.3	94	87	92	T -
27	4+	4-	3+	3	3	2+	4	5-	45	5	4	4+	3+	3-	2-	5-	5	58	127.6	49	45	76	T -
28	3+	4-	3+	4	3	4-	3	4-	41	5-	4-	3+	4-	2+	4-	2+	4-	43	123.1	36	35	71	- -
29	4-	2+	2+	3+	3-	4-	3	3+	32	4-	2	3-	4	2-	3-	3-	4-	30	111.7	32	35	59	T -
30	4-	6-	5-	4	3-	2	3	4	56	4	5-	4+	3+	3	3-	3	4-	45	108.5	38	42	55	T -
									35.2									29.8	177.4	110.4	114.5	129.6	

Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alone are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2 nT) prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap>6", K = "Ap≤6 but one Kp≥30 or two Kp values>3-"). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic three-hourly indices Km, Kn, Ks, daily mean values, Am, An, As (unit 1nT), and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices daily north (N) and south (S) values, and half-daily antipodal mean (M) values are given. Quiet 24-hour and 48-hour intervals centered on 1200 UT are indicated for really quiet as C and for quiet but with some slightly disturbed three-hour intervals as K. The first hundred years series of aa is in IAGA Bulletin No.33, and complementary data are in IAGA Bulletin No.39.
NOTE: aa-indices are provisional from 1 January 1981 until further notice, in connection with change of southern hemisphere observatory.

Solar flux adjusted to 1 A.U. (Sa) prepared by National Research Council, Ottawa. An asterisk denotes flux adjusted for burst. Observed solar flux (S) available from WDC-A for STP.

Provisional sunspot number (Ri) (dependent on observations at Locarno Observatory complemented by an international network) by A. Koeckelenbergh, Observatoire Royal de Belgique, Bruxelles, Belgium.

Sunspot numbers (Ra) are prepared by the American Association of Variable Star Observers.

Sunspot numbers (Rs) are computed from the daily Sa values by WDC-A for STP.

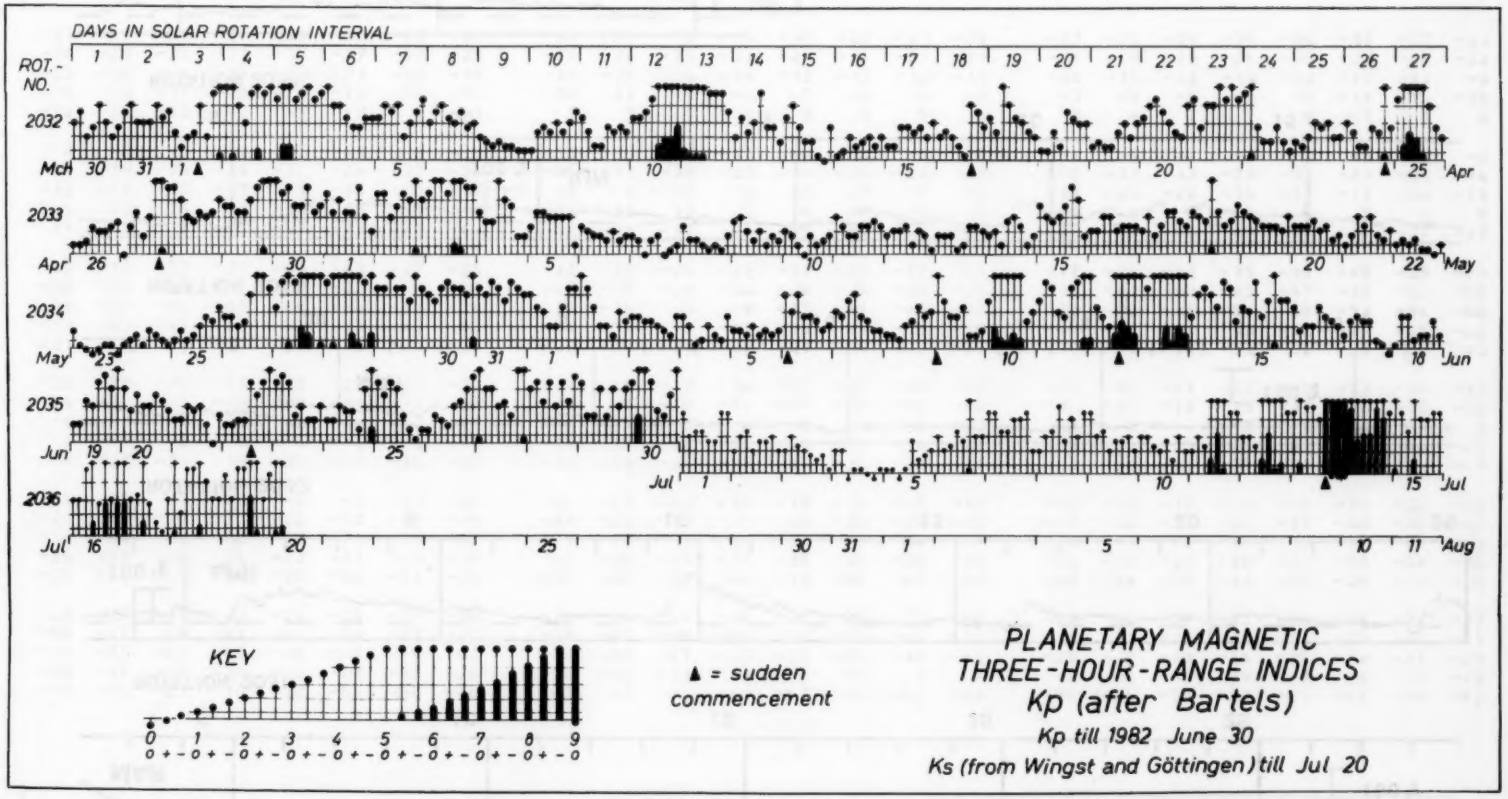
Inferred interplanetary magnetic field (IMF) prepared from Vostok observations for first half-day by the Institute for Terrestrial Magnetism, Ionosphere and Radio Propagation, Moscow, USSR; and prepared from Thule observations for second half-day by Space Environment Services Center, NOAA, Boulder, Colorado, USA. T = Toward the sun, A = Away from the sun, * = Effect doubtful or not discernible, - = Missing Data.

These data are reprinted from the monthly publication *Solar-Geophysical Data* issued by the National Geophysical and Solar-Terrestrial Data Center. *Solar-Geophysical Data* is available on a data exchange or subscription basis. For information write to address as given above.

DAILY AVERAGE INDICES Ap

DAY	1981 JUL	AUG	SEP	OCT	NOV	DEC	1982 JAN	FEB	MAR	APR	MAY	JUN
1	17	18	5	9	7	6	9	41	68	20	22	20
2	22	15	18	22	5	9	9	60	107	42	30	18
3	9	18	9	36	8	8	20	35	13	48	45	9
4	9	11	11	17	6	10	12	49	12	22	19	7
5	12	15	17	7	11	9	4	37	16	21	14	6
6	19	14	8	6	9	4	10	39	3	18	6	14
7	14	10	5	32	19	3	12	26	3	5	4	14
8	8	4	10	25	27	15	9	18	11	12	5	9
9	6	7	11	21	4	10	4	15	20	10	8	16
10	4	16	9	27	13	9	4	35	16	61	5	51
11	13	15	21	46	31	6	5	45	10	47	9	32
12	20	9	10	12	39	23	2	41	8	15	6	59
13	9	9	12	17	5	12	4	54	13	11	6	62
14	7	8	10	73	27	6	3	42	11	6	8	24
15	4	13	10	20	20	6	12	18	7	10	20	26
16	8	8	7	8	17	4	17	6	4	11	10	10
17	29	25	4	18	32	7	10	30	14	19	12	6
18	10	23	18	6	26	14	13	34	20	12	20	7
19	9	10	38	23	14	10	3	36	10	8	12	24
20	12	8	9	67	13	6	6	26	12	20	8	18
21	6	14	7	33	15	6	14	21	23	32	8	9
22	24	13	13	72	11	3	27	51	38	18	4	20
23	37	56	4	27	20	[illegible]	22	29	8	9	2	20
24	13	28	7	18	9	10	21	24	12	15	4	21
25	134	16	13	18	27	8	9	42	20	52	8	17
26	78	8	32	10	9	6	7	43	11	7	24	16
27	24	25	21	10	4	6	13	12	9	24	54	32
28	8	18	6	19	6	12	17	10	6	21	56	27
29	5	18	14	12	4	32	11		13	31	35	19
30	9	17	15	12	1	30	27		15	30	35	39
31	12	15		4		18	34		20		31	
MEAN	19	15	12	23	15	10	12	33	18	22	17	22

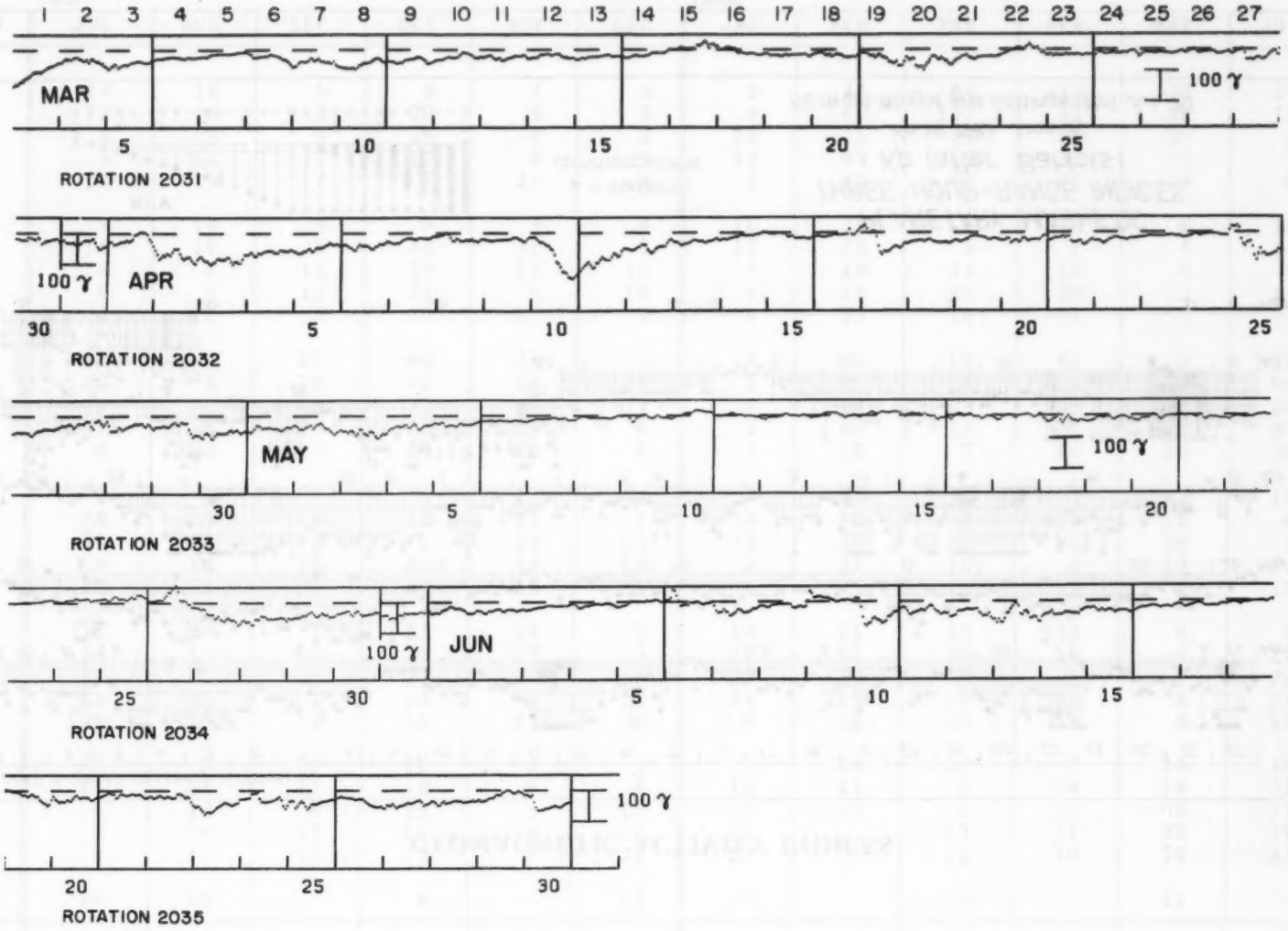
GEOMAGNETIC ACTIVITY INDICES


DAYS IN SOLAR ROTATION INTERVAL
ROT.-NO.
2032
Mch 30 31 1 5 10 15 20 25 Apr
2033
Apr 26 30 1 5 10 15 20 22 May
2034
May 25 30 31 1 5 10 15 18 Jun
2035
Jun 19 20 25 30
Jul 1 5 10 15 Jul
2036
Jul 16 20 25 30 31 1 5 10 11 Aug
KEY
0 1 2 3 4 5 6 7 8 9
0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0
▲ = sudden commencement
PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp (after Bartels)
Kp till 1982 June 30
Ks (from Wingst and Göttingen) till Jul 20

GEOMAGNETIC ACTIVITY INDICES

Hourly Equatorial Dst

by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

HOURLY EQUATORIAL Dst VALUES (PROVISIONAL

NASA/GODDARD SPACE FLIGHT CENTER

JUNE 1982

(Time-UT) (Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-31	-39	-36	-34	-35	-36	-29	-25	-24	-21	-15	-15	-18	-22	-21	-20	-23	-25	-29	-36	-36	-37	-37	-33
2	-26	-29	-28	-33	-37	-37	-30	-29	-29	-26	-23	-23	-24	-30	-31	-25	-24	-24	-25	-26	-30	-27	-26	-23
3	-25	-28	-24	-26	-23	-21	-20	-18	-17	-18	-16	-14	-12	-13	-12	-14	-14	-15	-13	-14	-13	-13	-13	-9
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5	-18	-15	-13	-12	-9	-4	1	1	1	1	0	1	0	0	5	2	3	4	7	7	4	-1	1	4
6	6	6	13	39	35	19	3	-14	-13	-8	-11	-11	-2	-3	-4	0	-1	-5	-8	-9	-5	-6	-3	-2
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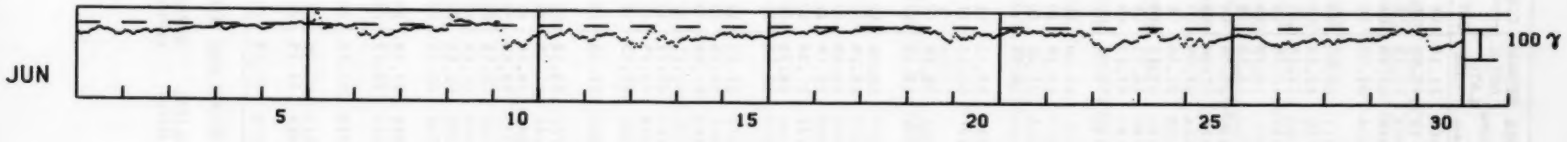


PRINCIPAL MAGNETIC STORMS

JUNE 1982

OBS. 3 letter code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
HON	21.1N	06	0243	SC	--	8	3	06(1,3)	4	01	81	13	06	16
FRD	49.6N	06	0243	SC	4	47	- 7	07(4)	5	20	131	44	--	--
HON	21.1N	06	1631	SC	--	5	5	07(4)	4	03	81	11	07	12
HYB	07.6N	06	0244	SC	- .3	37	- 1	06(1) 07(4)	5	6	155	25	07	19
GUA	04.0N	06	0244	SC*	..	40	-11	06(1)	5	10	130	10	06	14
SIT	60.0N	09	0042	SC*	11 *	49	* 22	* 10(3)	7	--	--	720	11	13
FRD	49.6N	09	0040	SC*	5	68	- 8	10(3)	6	21	186	100	12	--
HON	21.1N	09	0039	SC	--	19	11	10(2)	6	09	182	32	12	05
JAI	17.3N	09	0039	SC	- 1.8	48	-11		-	11	174	57	11	11
SHL	14.7N	09	0039	SC	1.3	48	8		-	11	187	53	11	11
UJJ	13.5N	09	0039	SC	- 1.1	55	-10		-	9	170	48	11	11
ABG	09.5N	09	0039	SC	- 1.3	45	-10	10(2)	6	9	193	53	11	11
HYB	07.6N	09	0039	SC	- .6*	47	- 1	10(2,5)	6	8	199	35	12	07
GUA	04.0N	09	0040	SC*	..	53	-16	09(1)	5	10	110	20	09	18
ANN	01.5N	09	0039	SC	- 1.4	51	25		-	7	178	68	11	11
TRD	01.1S	09	0039	SC	.3	39	57		-	5	194	139	11	11
PMG	18.6S	09	0040	SC*	- .6*	44	35	10(2,3,6)	5	5	200	80	10	18
GNA	43.2S	09	0040	SC*	- 7.5*	16	-25	* 10(2,6)	5	16	140	90	10	20
KGL	56.5S	09	0039	SC*	9	23	5	9(1)	4	11	26	17	09	15
COL	64.6N	10	01--	..	..	..	..	10(5,6)	7	365	1710	1250	16	02
WIT	54.2N	10	01--	..	..	..	..	10(2,4,5)	6	20	210	140	10	18
GUA	04.0N	10	0154	..	..	..	..	10(2)	5	10	190	30	10	18
KGL	56.5S	10	0155	..	..	..	..	10(2,6)	6	50	218	177	10	18
HER	33.7S	11	23--	..	..	..	..	11(8) 12(1)	5	19	45	58	12	03
KGL	56.5S	11	1650	..	..	..	..	12(1)	7	44	395	194	12	08
ABG	09.5N	12	1441	SC	- .4	34	- 3	12(5,6,7)	5	9	106	64	14	09
COL	64.6N	12	1443	SC*	-24	-12.5	5-71	12(5,6) 13(3,5) 14(4) 15(3)	-	--	--	--	--	--
SIT	60.0N	12	1442	SC	2	15	27	13(3)	8	70	780	580	14	13
WIT	54.2N	12	1443	SC*	- 3 *	97	* 0	12(6)	7	25	285	140	14	01
FRD	49.6N	12	1443	SC*	6	-62	- 3	13(7,8)	6	26	285	126	--	--
HON	21.1N	12	1442	SC	--	17	5	13(5)	5	09	98	32	15	16
JAI	17.3N	12	1441	SC	- 0.6	37	- 7		-	11	85	59	14	09
SHL	14.7N	12	1441	SC	.5	41	6		-	9	107	34	14	09
UJJ	13.5N	12	1441	SC	- .2	42	- 8	13(1,3,4,7)	-	9	99	55	14	09
HYB	07.6N	12	1442	SC	- .1	37	- 2	12)6,7) 13(1,5,7,8)	5	7	113	24	14	21
GUA	04.0N	12	1443	SC	..	30	- 8	13(1)	5	10	110	50	14	12
ANN	01.5N	12	1441	SC	- 1.1	43	19		-	6	127	58	14	09
TRD	01.1S	12	1441	SC	.2	33	45		-	5	169	103	14	09
HER	33.7S	12	1443	SC	2	18	8	12(8) 13(1,7)	5	23	98	79	14	03
GNA	43.2S	12	1443	SC	3.6	41	25	12(7,8) 13(1,7,8)	5	21	100	100	14	02
KGL	56.5S	12	1445	SC	4	44	16	12(6,8) 13(1,7,8)	6	64	408	383	14	12
HYB	07.6N	19	0700	..	..	..	..	19(8)	5	8	153	42	21	10
FRD	49.6N	22	13--	..	..	..	..	24(8) 30(2)	6	30	162	142	01	--
JAI	17.3N	22	1300	..	..	..	..		-	--	76	--	23	21
SHL	14.7N	22	1300	..	..	..	..		-	9	78	35	23	21
UJJ	13.5N	22	1300	..	..	..	..		-	3	62	61	23	21
ABG	09.5N	22	1300	..	..	..	..	23(2,3)	4	8	49	79	23	21
HYB	07.6N	22	1336	SC	2 *	9	- 1	22(5,7) 23(3,7)	3	7	52	51	23	21
ANN	01.5N	22	1300	..	..	..	..		-	7	90	60	23	21
TRD	01.1S	22	1300	..	..	..	..		-	5	121	57	23	21
HYB	07.6N	24	0300	..	..	..	..	24(8)	5	8	139	22	25	18
HER	33.7S	24	19--	..	..	..	..	24(8)	5	29	57	77	25	11
HYB	07.6N	26	1600	..	..	..	..	26(8) 27(7,8) 28(4,6)	4	7	82	24	29	03
SIT	60.0N	27	01--	..	..	..	..	30(2)	8	--	820	460	30	14
HER	33.7S	27	18--	..	..	..	..	27(7)	5	22	68	84	28	12
HYB	07.6N	29	0800	..	..	..	..	29(4) 30(2)	4	7	125	28	01	02

REPORTS WERE RECEIVED FROM THE FOLLOWING OBSERVATORIES:

AI IBAG ANNAMALAINAGAR COLLEGE FREDERICKSBURG GNANGARA GUAM HERMANUS HONOLULU HYDERABAD
JAIPUR KERGUELEN PORT MORESBY SHILLONG SITKA TRIVANDRUM UJJAIN WITTEVEEN

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

JUNE 1982

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)

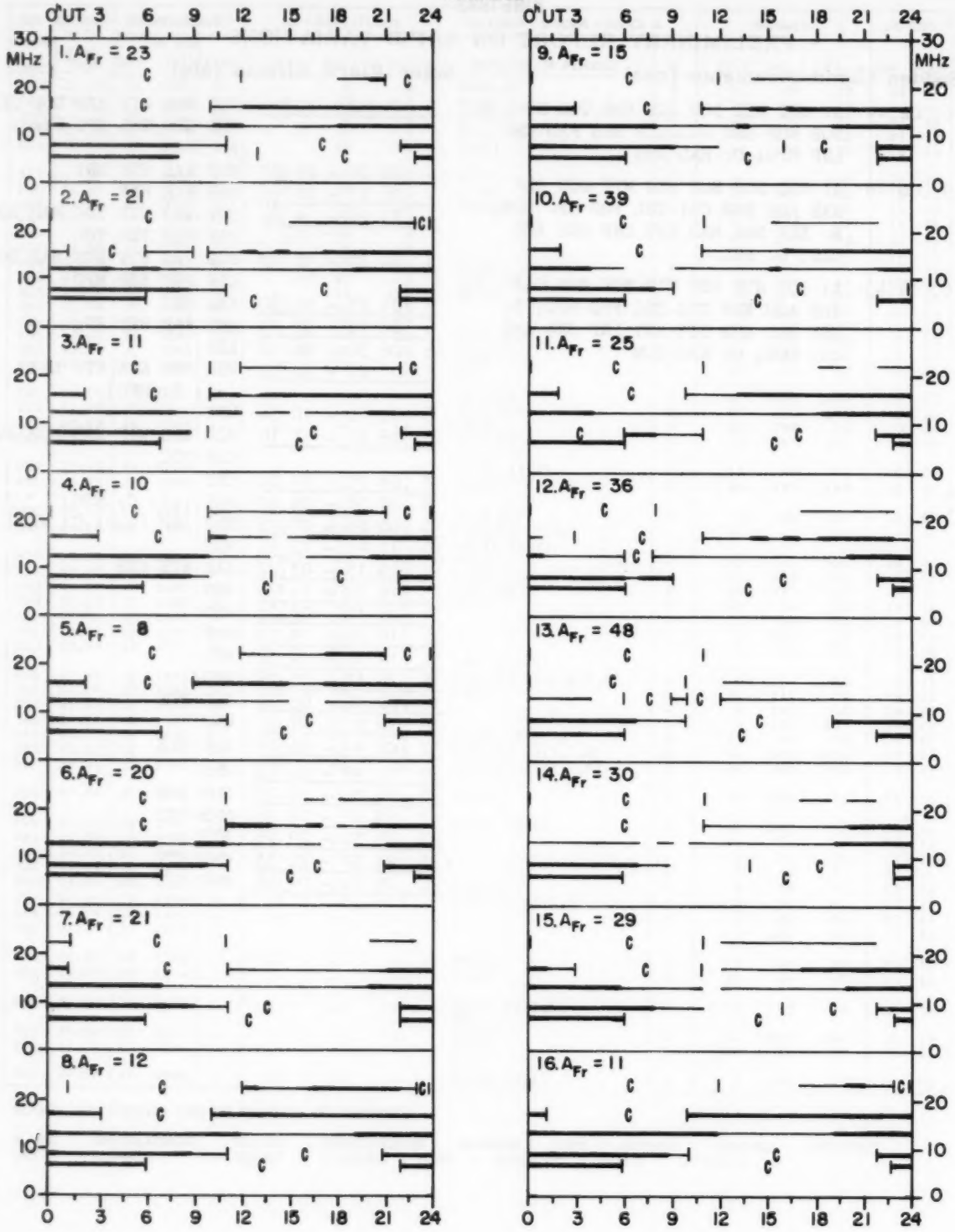
6	02 44	A: SOD WIT DOU AQU EBR TOL DUM; B: DOB NUR ESK WNG CLF HRB FRD KNY LNP MPO; C: HAD AMS
9	00 40	A: SOD DOB NUR WNG WIT DOU CLF HRB AQU EBR COI TOL FRD MPO DUM; B: ESK NGK HAD KNY LNP GNA AMS CZT; C: KGL
12	14 43	A: SOD NUR WNG WIT NGK DOU CLF HRB AQU EBR COI TOL FRD MPO; B: ESK HAD MMB HTY KNY LNP GNA AMS CZT KGL; C: KAK DUM

Solar Flare Effects (sfe)

3	11 42 - 13 10	SOD WNG WIT HAD DOU CLF MMB EBR TOL MPO (ssc: A: COI)
4	05 06 - 05 30	MMB KAK HTY KNY
4	06 31 - 06 45	MMB KAK KNY
4	13 26 - 14 20	SOD WNG WIT NGK HAD DOU CLF AQU EBR TOL
4	14 20 - 15 00	SOD WNG WIT NGK HAD DOU CLF AQU EBR MPO
5	01 27 - 01 50	KAK KNY
5	06 15 - 07 20	MMB KAK HTY KNY
5	06 30 - 06 32	LNP
5	07 27 - 08 00	WNG MMB KAK KTY KNY (si: B: MPO)
6	10 40 - 10 56	WIT
6	16 31 - 17 10	SOD WNG WIT HAD DOU AQU EBR TOL
7	08 27 - 09 00	KNY
8	09 08 - 09 20	NGK (si: C: MPO)
10	00 58 - 01 15	KNY LNP (ssc: C: WNG)
10	11 45 - 12 23	WNG
12	05 15 - 07 27	KAK HTY KNY
13	14 00 - 14 20	WNG
14	06 10 - 06 28	WNG
15	10 20 - 11 00	MMB
15	14 10 - 14 32	WNG
15	15 11 - 15 26	WNG
16	02 10 - 03 00	KAK HTY
16	16 50 - 17 07	WNG
17	02 41 - 03 05	KAK HTY
20	01 49 - 02 05	MMB
20	04 02 - 04 20	MMB LNP
21	23 01 - 23 35	MMB HTY
23	23 30 - 23 46	HTY
25	21 32 - 22 05	MMB HTY
26	00 45 - 01 45	MMB HTY LNP

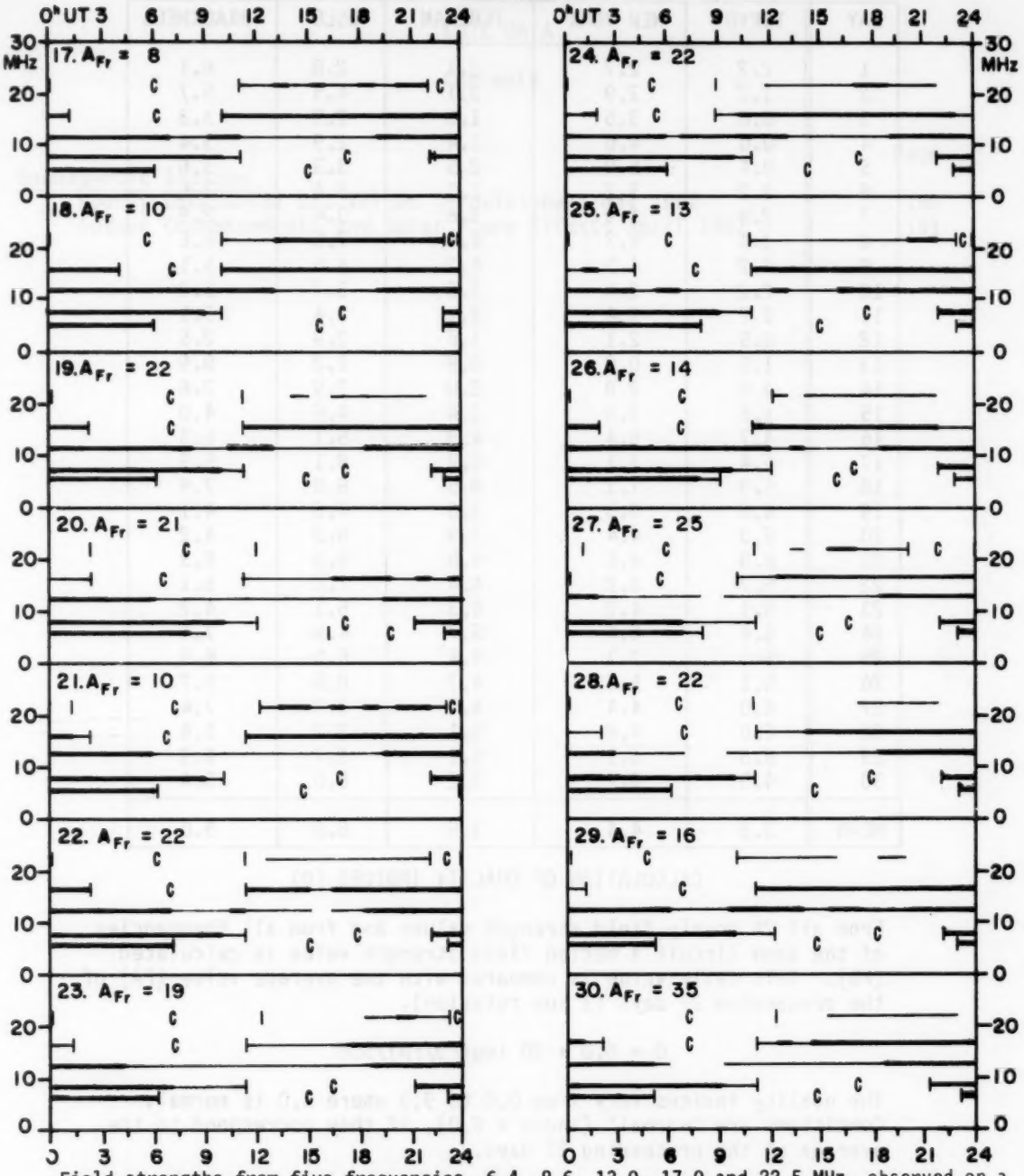
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1982



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

JUNE 1982



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Norddeich -New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1 μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES

JUNE 1982

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	2.2	2.7	2.1	2.8	6.1
2	1.2	2.9	3.1	4.5	5.7
3	0.0	3.6	1.5	2.5	3.3
4	0.0	4.0	1.4	2.9	3.4
5	0.4	5.0	2.5	3.3	3.6
6	1.2	3.7	1.3	3.4	3.5
7	2.9	1.9	3.8	3.4	2.9
8	3.4	6.3	4.4	7.5	6.6
9	4.2	4.3	4.2	4.6	5.1
10	2.2	2.4	3.6	3.7	5.2
11	2.7	2.4	2.1	3.4	5.1
12	0.5	2.1	1.6	2.9	2.5
13	1.5	0.8	0.9	1.2	0.9
14	4.0	2.8	5.0	3.9	2.6
15	1.5	3.3	2.4	4.6	4.0
16	4.7	5.4	4.3	5.1	6.3
17	5.4	7.1	5.7	8.1	5.9
18	5.9	7.1	8.5	8.8	7.9
19	6.0	5.5	3.6	4.6	4.1
20	6.3	4.4	3.9	6.3	4.2
21	6.8	6.4	4.8	5.9	6.3
22	5.7	5.8	4.4	7.0	5.1
23	5.1	4.2	4.3	5.1	4.2
24	5.4	6.4	5.7	4.9	7.4
25	5.5	7.3	5.4	6.0	6.9
26	5.1	5.5	4.7	8.5	5.7
27	6.0	4.4	4.7	7.7	7.4
28	6.0	4.8	5.1	7.7	5.6
29	6.6	6.1	5.1	5.7	6.9
30	4.5	3.7	5.2	5.0	5.4
MEAN	3.8	4.4	3.8	5.0	5.0

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

Scale for Quality Indices

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

SGD 456 Part I (Prompt)

LATE DATA

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HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

NASA/GODDARD SPACE FLIGHT CENTER

MAY 1982

(Time-UT)

(Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-51	-55	-50	-42	-32	-32	-35	-42	-39	-40	-38	-39	-41	-42	-42	-42	-47	-49	-44	-38	-36	-39	-37	-3[illegible]
2	-31	-36	-43	-42	-45	-39	-36	-33	-31	-41	-35	-29	-26	-23	-31	-39	-41	-42	-50	-55	-61	-55	-51	-45
3	-50	-51	-50	-56	-50	-48	-54	-63	-57	-44	-44	-57	-60	-63	-52	-50	-55	-66	-72	-72	-63	-57	-61	-56
4	-47	-41	-40	-37	-34	-35	-37	-36	-32	-30	-38	-39	-33	-27	-32	-42	-46	-40	-35	-32	-32	-32	-30	-26
5	-23	-27	-26	-21	-25	-35	-34	-31	-32	-32	-35	-35	-28	-25	-30	-30	-30	-30	-29	-29	-25	-23	-20	-16
6	-17	-18	-18	-18	-16	-16	-19	-18	-16	-15	-17	-18	-17	-17	-19	-18	-15	-15	-17	-17	-18	-20	-20	-21
7	-17	-15	-14	-12	-10	-11	-12	-12	-11	-10	-11	-10	-7	-7	-8	-12	-12	-11	-9	-11	-15	-16	-15	-14
8	-13	-9	-6	-2	-4	-4	-6	-8	-9	-7	-8	-8	-9	-8	-8	-9	-10	-11	-10	-8	-6	-3	-1	-2
9	-4	-1	0	-6	-11	-22	-19	-11	-5	-3	1	3	1	-5	-8	-9	-8	-4	1	-3	-7	-8	-8	-7
10	-10	-12	-10	-6	-2	-2	-2	1	6	7	8	8	9	13	16	16	15	14	12	11	11	12	9	4
11	-3	-2	-3	-2	0	2	1	5	8	8	4	2	2	1	0	-3	-1	-1	-1	-3	-4	-5	-4	-7
12	-11	-12	-13	-8	-5	-5	-7	-5	-7	-3	-3	2	5	4	1	-1	0	0	-1	-3	-1	2	1	-1
13	-3	-7	-7	-4	-5	-5	-3	2	6	8	9	9	9	8	8	6	1	0	-4	-8	-4	-2	-1	2
14	1	-2	-6	-4	1	1	2	6	10	12	7	6	5	10	12	11	9	8	9	11	12	12	10	9
15	2	-1	-5	3	4	8	8	4	3	6	1	0	6	0	-2	-4	-3	-4	-12	-14	-8	-10	-8	-6
16	-7	-11	-13	-5	0	4	6	3	-3	-2	0	4	1	-4	-5	-5	-6	-12	-12	-7	-3	-3	-4	-5
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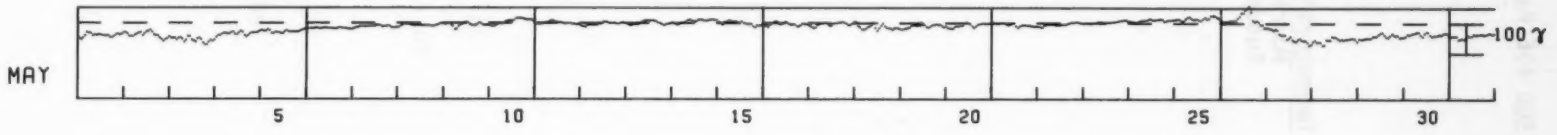

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

APRIL 1982

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)

1	13 05	A: SOD DOB NUR WNG DOU VIC COI LNP BNG HUA MPO; B: WIT NGK VAL BDV MMB AQU EBR TOL FRD HTY KNY PMG GNA ACS AMS TWA KGL DUM; C: HAD CLF KAK CZT
16	17 02	A: SOD NUR WNG WIT HAD DOU VIC AQU COI TOL KNY LNP BNG HUA MPO ACS TWA; B: ESK NGK VAL BDV CLF MMB EBR FRD KAK HTY PMG GNA AMS CZT KGL DUM
24	20 16	A: SOD DOB NUR ESK WNG WIT HAD DOU VIC AQU EBR COI TOL FRD KNY LNP BNG HUA MPO TWA DUM; B: NGK VAL BDV CLF MMB KAK HTY GNA AMS CZT KGL

Solar Flare Effects (sfe)

2	09 07	09 14	EBR LNP
3	06 57	07 00	LNP
4	04 02	04 04	LNP
4	06 20	06 40	WNG
8	14 35	14 48	MPO
12	11 27	11 53	WNG DOU BDV
13	14 40	14 45	HUA?
14	01 01	01 18	MMB KAK KNY LNP
14	02 46	03 40	MMB
14	06 03	06 20	MMB KAK HTY KNY LNP
14	07 14	.. ..	BNG
19	19 08	.. ..	BNG
23	13 11	.. ..	CLF
24	10 15	10 29	SOD
29	08 52	.. ..	BNG
29	11 05	11 41	WNG BDV

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